

Attachment, coping self efficacy and distress in caregivers of individuals with dementia

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Thank you

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Abstract

Introduction

The study investigated if coping self-efficacy (CSE) mediated the relationship between attachment style and distress (anxiety, depression and stress) in informal caregivers to individuals with dementia (CGID).

Methods

A convenience sample of CGID (N= 68, mean age 61, SD 15.8) were recruited through organisations providing caregiver services (N=17). These organisations distributed questionnaires to the CGID, containing self-report measures of attachment style, CSE, perceived stress, anxiety, depression and functional ability of person cared for.

Analysis

Hypotheses were explored using correlations, partial correlations, multiple regression analysis and the Sobel test.

Results

CGID reported a significant decline in the quality of their relationship to care receiver over period of care. They also had clinically significant levels of anxiety (41%) and depression (21%).

CSE was found to mediate the relationship between anxiety (Sobel= 3.155, $p=.001$) and self-model of attachment. CSE was negatively correlated with depression ($r=-.537$, $n=68$, $P<.001$), and perceived stress ($r=-.537$, $n=68$, $p<.001$), but was positively correlated with self ($r=.439$, $n=68$, $p<.001$) and other-models ($r=.295$, $n=68$, $p=.015$) of attachment.

Discussion and conclusions

Results are discussed in relation to attachment and social cognitive theory. Findings indicated that CSE may play an important role in caregiver distress. Further research should consider interventions to heighten the CSE beliefs of carers.

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Chapter 1

Introduction

The physical, emotional, financial and social cost of dementia is considerable and in many ways unquantifiable (Robinson, 2006). The cost of dementia has many ramifications affecting not only the individual with dementia but also the family members who care for them. This study investigates distress in caregivers of individuals with dementia (CGID), their coping self-efficacy beliefs and attachment styles, and the relationship between these factors.

1. Dementia

Dementia is an umbrella term, encompassing 70-80 chronic progressive neurological conditions, the most common of which is Alzheimer's disease, followed by vascular dementia (Clare, 2008; Hannay et al., 2004; Knapp et al., 2007; Spinnler & Della Sala, 1999, Kneebone, 2003, Hoyle, 2005). Dementia refers to symptoms, resulting from progressive degeneration of nerve cells within the brain affecting domains such as memory, communication, emotion and personality (Clare, 2008; Hannay et al., 2004; Hoyle, 2005; Knapp et al., 2007; Spinnler & Della Sala, 1999). It is characterised by an irreversible gradual or step like loss and decline of skills required to complete daily activities (Clare, 2008; Knapp et al., 2007).

Dementia is linked to 10 percent of male and 15 percent of female deaths in those over the age of sixty-five (Knapp et al., 2007). Although dementia can occur in those under this age, it is most common in older age groups, with prevalence estimated to double every five years, from

the age of 65 onward (Clare, 2008; Knapp et al., 2007; Spinnler & Della Sala, 1999). Approximately one in every five individuals over the age of 80 will have dementia (Knapp et al., 2007).

Varying definitions of dementia make it difficult to gain an exact prevalence rate (Robinson, 2007). It is estimated that in Scotland alone there are between 58000 to 65000 people with dementia, a number which is predicted to increase by seventy-five percent in the next twenty-two years (Kinnaird, 2008). This increase can be partly attributed to changes in life expectancy (Kinnaird, 2008).

Over the last twenty-two years within the UK, life expectancy has increased by 5.2 years in males and by 3.5 years in females (Gallop & Wells, 2007). Currently there are 4.4 million individuals within the UK who are over seventy-five years of age; official population predictions indicate that this will increase to 7.7 million by 2037 (George, 2001). This increase has been associated with advances in medical science and improved public health initiatives (George, 2001; Knapp et al., 2007; Ostwald, 2006).

The negative side of having an aging population is that there has been a rise in chronic conditions such as dementia. It is estimated that within the UK 63.5% (424,378) of individuals who developed dementia after the age of sixty-five live in private households (Knapp et al., 2007). Although such large percentages live within the community, studies suggest that 94 percent of people with dementia require some level of support (Jackson et al., 2007).

It is estimated that there are up to 300,000 individuals within the UK who provide informal (unpaid) social, emotional or practical care to someone with dementia (Kneebone & Martin, 2003). The majority of this is provided by close female family members (Anderson, 1987; Ferri et al., 2005; Stoltz et al., 2006; Uden & Willman, 2004; Zarit, 2006).

As the number of individuals with dementia increases, more people will find themselves becoming a caregiver to an individual with dementia (CGID) (George, 2001). Within their role as a CGID these individuals may experience a multitude of changes and challenges, including complex legal, social and financial decisions, increased emotional and physical demands, in addition to a loss of companionship and intimacy (Adams & Sander, 2004; Kneebone & Martin, 2003).

2. Caregiving

CGID are forced to attempt to combine dealing with their own personal sense of loss and grief, at the demise of many of the essential features of their loved ones personality and potential future plans together, with meeting care demands (Adams & Sanders, 2004; Daire, 2002; Kübler-Ross & Kessler, 2005; Verhaeghe, et al., 2005; Robinson, 2006). The enormity of this task is highlighted by the following three quotes taken from a carers' website. The first two quotations are from female carers aged between eighty and ninety years of age; both of whom care for their husbands.

"His world now is shrinking and it is very, very sad. Because he wants me with him constantly it is very exhausting for me" (Crossroads, 2008)

"As a carer, I neglect my own health requirements because they may entail regular appointments e.g. dental / eye care. I also worry about getting older and perhaps experiencing ever increasing disabilities associated with ageing. At the present time I can't imagine how anyone else can take on my necessary everyday household duties, as well as the various practical and medical demands of my ailing husband. I am sure that this story is repeated by thousands of others in similar circumstances - the future does not bear contemplation". (Crossroads, 2008)

The final extract is from a husband caring for his wife who is suffering from early onset Alzheimer's disease:

"In a very short space of time my life changed completely. The stress and strain have been enormous. I got so depressed at one point I considered suicide as a way out of the hell we were going through. It is so physically and mentally and emotionally draining watching the one you love slowly slipping away, but thankfully with the help and support of fellow carers, Broxtowe Crossroads, professionals and antidepressants I have now come through the worst and hopefully cope better than I did." (Crossroads, 2008)

These quotes highlight that caregiver distress is a serious and prevalent issue (George, 2001). The ability of the carer to consistently provide quality care is highly dependent on their own health (George, 2001). Research indicates that poor carer health is associated with care recipient institutionalisation (Cooper et al., 2006; Huckle, 1994) and elder abuse (Paveza et al., 1992; Homer & Gilleard, 1990).

Prior to 1980 there had been minimal research on the effects of caregiving on the carer (Zarit, 2006). Since this time it has also been consistently shown that carers have weakened physiological functioning, poorer physical health (Crespo et al., 2005; Zarit, 2006; Torp et al., 2008) and higher levels of mental health related difficulties when compared with non-care giving populations (Eagles et al., 1987; Huckle, 1994; Torp et al., 2008). As many as fifty percent of carers have been found to have clinical levels of anxiety (Cooper et al., 2006; Mahoney et al., 2005); other commonly cited mental health difficulties include stress (Eagles et al., 1987; Huckle, 1994; Torp et al., 2008) and depression (Adams & Sanders, 2004; Baumgarten et al., 1992).

Being a carer has also been linked to increased mortality rates (Schulz & Beach, 1999). A prospective population based cohort study was conducted on 392 caregivers and 427 non-caregivers, aged between 66 to 96 years old, who lived with their spouses (Schulz & Beach, 1999). The study, which had an average follow up time of 4.5 years, reported that at follow up 12.6% (N = 103) of the participants had died. The authors concluded that caregiver strain was associated with a significantly higher risk of mortality (63%) (Schulz & Beach, 1999). However, it should be noted that this study only considered spousal carers therefore the results may not apply to other types of carers. Additionally, as the study was conducted in United States results may not be directly comparable to the United Kingdom due to cultural factors (Schulz & Beach, 1999).

2.1 Care receiver factors

A number of factors have been associated with carer distress. Increased levels of burden, stress and distress have been linked to caring for someone with higher levels of behavioural problems and with

a decreased ability to perform activities of daily living (ADL) (Huckle, 1994). It has been indicated that as the individual with dementia declines they are less able to complete ADLs and develop more behavioural problems; carer distress increases.

2.2 Caregiver factors

Although some studies indicated that care receiver factors such as functional ability (capability to complete ADLs) are associated with carer distress, research indicates that caregiver factors may be more important and powerful predictors (Cousins et al., 2002; Crespo, et al., 2005; Pearlin et al., 1990; Zarit, 2006).

Anderson (1987) suggested that stress and anxiety could be predicted by the personality of the carer and their pre-morbid relationship with the care receiver. Difference in pre-morbid relationship style may also potentially affect an individuals willingness to become a carer. BurrIDGE, Winch and Clavarino (2007), advocate that although many carers will choose to become a carer willingly, some take on the role with reluctance, but will attempt to hide this reluctance in order to avoid the disapproval of their peers. These conclusions were based on research into carers of cancer patients and therefore it is possible that CGID do not experience reluctance and fear of disapproval in the same way.

Another relatively taboo topic related to caregiving is elder abuse (Homer & Gilleard, 1990). The prevalence and risk factors associated with severe family violence and Alzheimer's disease has been assessed in 184 care-receiver giver dyads (Homer & Gilleard, 1990). They concluded that an individual with Alzheimer's disease was 2.25 times more likely to experience a physically abusive episode than an older person who does not have Alzheimer's disease residing in the

community (Paveza et al., 1992). Level of violence was found to be linked to caregiver depression and carer receiver variables such as cognitive or functional ability. The results of this study could be influenced by reporting bias, as caregivers may be prone to underestimating and reporting levels of abuse. It should also be noted that this study was conducted within the United States, therefore due to different cultural, health and social care systems the results may not be generalizable to carers residing in the U.K.

Age may also be an important factor related to caregiver distress, as a high percentage of CGID are elderly. UK national statistics (2001) stated that of the 336,000 people aged 90 and over, nearly 4, 000 are providing 50 or more hours of unpaid care per week to another family member or friend, though not all of these carers are CGID.

The predicament with older carers is that many have pre-existing health difficulties of their own (Schulz & Beach, 1999). A number of studies have shown that when compared with non-caregiving controls, older caregivers have lower immune function (Schulz & Beach, 1999), greater cardiovascular reactivity (Kiecolt-Glaser et al., 1991) and slower wound healing (Kiecolt-Glaser et al., 1995).

Although various factors have been identified, caregiver research has been complicated by the fact that caregiver distress has been conceptualised in various ways (Cousins et al., 2002). These include carer burden (Anderson, 1987; Folkman et al., 1994; Yamamoto & Wallhagen, 1997), strain (Huckle, 1994), well-being (Eagles et al., 1987), expressed emotion burn-out, cost of care (Huckle, 1994), institutionalisation (Burridge, Winch & Clavarino, 2007) depression (Crespo et al., 2005) and anxiety (Cooper, Owens et al., 2008; Crespo et al., 2005). In addition, there is lack of agreement concerning what

assessments, such as burden and cost of care, actually measure. Undefined measures and assessments have made it difficult to establish if carers are more distressed than their non-caring peers (Anderson, 1987).

3. Stress and coping

Stress is a component of distress and can be understood using physiological and cognitive frameworks. Although both of these frameworks of stress and coping provide different levels of explanation and definitions, they are compatible with each other. In the physiological framework the body is seen to have two main responses to stress, namely the sympathetic nervous system and pituitary gland (Naughton, 1997). The former of these is linked to the primitive 'fight or flight' response, which causes bodily changes in preparation for the individual to defend themselves or run away from the perceived threat (Naughton, 1997).

The pituitary response is linked to cortisol secretion (Naughton, 1997). Although some degree of stress can help an individual to function effectively, stress above this optimal level can be harmful (Naughton, 1997; Tosevski, & Milovancevic, 2006). Prolonged secretion of cortisol has been associated with a number of health problems including those related to cardiovascular, digestive, musculo-skeletal and immune difficulties (Naughton, 1997; Tosevski, & Milovancevic, 2006).

In contrast, within a cognitive framework, Lazarus and Folkman's model (1984) has proved to be very influential, it considers a stressor as being a stimuli, to which an individual feels they lack the resources to react to effectively. Stressors are evaluated by the individual using both primary and secondary appraisals (Lazarus & Folkman, 1984; 1988; Naughton, 1997). Primary appraisals involve the individual evaluating if the stimulus is a harm/loss, threat or challenge to them (Lazarus, 1966; Naughton, 1997; Verhaeghe, et al., 2005). Secondary appraisals entail the individual evaluating the social (e.g. friendships), psychological (i.e. self-esteem and self-efficacy), material (i.e. money) and other resources available to them, and deciding if they are able to respond to or resolve the situation effectively (Lazarus, 1966; Naughton, 1997; Verhaeghe et al., 2005). Therefore a stimulus can become a stressor even if it does not actually present a 'real' threat to the individual (Verhaeghe et al., 2005).

The manner in which an individual responds to a stress stimulus is referred to as 'coping' (Verhaeghe et al., 2005). Throughout the last century two predominate theories of coping have emerged, one from the psychodynamic field and the other from cognitive psychology paradigm (Radnitz & Tiersky, 2007). Within the psychodynamic field, the work of Anna Freud has been important in our understanding of defence mechanisms and coping (Parker & Endler, 1996). She observed that though there are a wide variety of potential defence mechanisms, that individuals tended to utilise only a few of these, and that when under stress continuously resorted to their own preferred technique (Holahan, Moss & Scharfer, 1996; Parker & Endler, 1996). Her work focused on the role of unconscious processes such as ego defences and was later

developed and modified by Haan. The difficulty however, with these Psychodynamic theories of coping is that they do not readily lean themselves to empirical investigation.

In comparison cognitive explanations of coping have attracted a lot of empirical interest, particularly Lazarus and Folkman's (1984) theory which the majority of research has been based on (Kneebone & Martin, 2003). Within the cognitive framework coping has been conceptualised as constantly changing cognitive and behavioural efforts to manage demands that are appraised to be threatening (Verhaeghe, et al., 2005). A consistent combination of various coping behaviour is known as a coping strategy (Pruchno & Resch, 1989; Verhaeghe, et al., 2005). Holahan, Moss and Scharffer (1996, p.25) defined coping as "*stabilizing factors that can help individuals maintain psychosocial adaptation during stressful periods: it encompasses cognitive and behavioural efforts to reduce or eliminate stressful conditions and associated emotional distress*".

Lazarus and Folkman (1984) proposed that coping strategies fall into two different categories; those that directly affect the cause of stress (problem-oriented coping) by aiming to proactively alter, solve, re-conceptualise or reduce the effects of the stressor (Folkman & Lazarus, 1985; McCarthy et al., 2001; Parker & Endler, 1996; Verhaeghe et al., 2005) or, those that reduce the emotional distress (emotion-oriented coping) by self-preoccupation, fantasy and distraction (Folkman & Lazarus, 1985; McCarthy et al., 2001; Parker & Endler, 1996; Verhaeghe et al., 2005). Although individuals tend to possess a number of coping strategies for dealing with stressors, they are inclined to show a preference for a

particular coping strategy (Parker & Endler, 1996; Verhaeghe et al., 2005).

Coping processes are considered to be important in modifying the effect that stressors have on an individual (Folkman & Moskowitz, 2004; Pearlin & Schooler, 1978; Lazarus, 1966; Zarit, 2006). Coping has been termed as a mediator between stressful life events and distress, including anxiety, depression and somatic complaints (Endler & Parker, 1990). A mediator acts as a generative mechanism (intervening variable) which enables one variable, to influence another variable (Baron & Kenny, 1986; Fritz & MacKinnon, 2007; Pruchno & Resch, 1989; Wortman et al., 1992). Emotion-focused coping has been labelled as the dysfunctional type of coping, having been linked to depression, poorer adjustment and increased burden (Kramer, 1992; Parker & Endler, 1996; Verhaeghe et al., 2005).

This is supported by a number of studies, including the Billings et al. (2000) research into men who were providing AIDS-related care. They found that in the HIV positive group higher levels of physical symptoms were associated with higher levels of cognitive avoidance, which is a type of emotional-focused coping strategy (Billings et al., 2000). It should be noted that this study did not directly test if coping mediated the relationship between stress and physical symptoms; it only inferred that it might. Additionally, the findings of this study may not be applicable to non-AIDS-related caregivers, especially, as there is a high level of misunderstanding and stigma attached to AIDS which may create barriers, making it harder for caregivers to use social support coping strategies.

Crespo et al.'s (2005) research assessed coping and burden in caregivers (N=108), 61% of whom were CGID. The authors found that self-esteem, caregiver burden and emotion focused coping, were significantly associated with both anxiety and depression (Crespo et al., 2005). The research also suggested that those carers who experience the most distress had low levels of confidence in their coping abilities (Crespo, et al., 2005). However, it should be acknowledged that 39% of the carers were not caring for someone with dementia, which may again affect how generalizable the results are to CGID.

One study which highlights the potential importance of coping within CGID is that by Haley et al. (1996). They used a cross sectional design to compare white (N=123) and black (N=74) CGID. It was discovered that CGID who were black had better adjustment which could be attributed to differences in the use of coping strategies, as opposed to race per se (Haley et al., 1996). Results from both groups (N=197) demonstrated that avoidant coping was positively associated with depression, while approach coping (including problem focused strategies) was negatively associated with depression (Haley et al., 1996).

Similar findings were demonstrated in a larger scale cross-sectional study conducted by Pruchno and Resch (1989) on CGID (N=315). A carer specific measure of coping was used, in it participants were asked to rate how often over the previous month they had used each strategy. Emotional based strategies were found to be negatively associated with carer adjustment, whereas problem-focused strategies were linked to more positive effect (Pruchno & Resch, 1989). When considering these findings it should be kept in mind that the retrospective nature of the coping measure used in this study means

that the results may have been affected by caregiver memory bias. Additionally both Pruchno and Resch (1989) and Haley et al.'s (1996) studies were conducted within the United States, meaning that the results may not be relevant to carers in the U.K.

One study which has investigated the role of coping strategies and distress in a U.K. based population is that by Cooper, Owens et al. (2006). A total of 26 individuals with Alzheimer's disease and their family caregivers were stratified to ensure that it was representative of dementia severity, gender, and care setting (Cooper, Owens et al., 2006). Their findings indicated that dysfunctional coping strategies and depression were the main factors in predicting caregiver anxiety. They advised that interventions which target coping strategies may be useful in managing caregiver anxiety (Cooper, Owens et al., 2006).

However, conclusions drawn from this study are limited as direction of causality was only inferred and the sample was relatively small meaning results may be open to error. Additionally, the COPE coping scale (Carver et al., 1989) used in this research has been criticised by Ender and Parker (1990) for having a number of psychometric limitations including the use of multiple subscales and inconsistencies. They state that the COPE emphasises gender differences, but yet combines male and female data within its statistical analysis (Ender & Parker, 1990). In fact Folkman and Moskowitz (2004) have stated that despite decades of research there is no gold standard measure of coping. Regardless of these criticisms, the COPE needs to be acknowledged as one of the few questionnaires that measures coping strategies to have been validated with CGID (Cooper, Cornelius & Livingston, 2008).

A further difficulty which can be considered to be inherent in all of the aforementioned studies is that due to their cross sectional nature they fail to consider that under Lazarus and Folkman's (1984) model; stress, coping and adaptation are dynamic processes (Kneebone & Martin, 2003). From this perspective timing may be important and various coping strategies could be useful in dealing with caregiving stressors at different time points (Kneebone & Martin, 2003).

There has however, been supported from longitudinal studies such as that conducted by Goode et al. (1998). Whose research into coping in CGID (N=122) at two time points, 12 months apart, indicated that approach coping was associated with decreased depression and physical health problems (Goode et al., 1998).

Another potential drawback of the body of research into coping and CGID is that the vast majority has been conducted within a paradigm where the distinction between problem and emotion based strategies and subsequent functional/dysfunctional divide has become 'concrete' (Verhaeghe et al., 2005). This divide has been described by Verhaeghe et al. (2005) as artificial, they state that a specific coping strategy can fulfil both a problem and emotion focused function. To illustrate, seeking social support can result in the acquisition of advice (problem-focused function) and distraction (emotion-focused) (Verhaeghe et al., 2005).

Further evidence for this theory comes from Hinrichsen and Niederehe's (1994) cross-sectional research on CGID (N=152) which, on initial inspection, supports the presence of a functional/dysfunctional divide, with problem-solving strategies linked to carer distress (burden) (Hinrichsen & Niederehe, 1994). Further examination of the findings, in particular those indicating that 'active

management' (a problem-focused strategy) had a negative impact on carer's distress (Hinrichsen & Niederehe, 1994), supports the view that the divide between emotion and problem based strategies is not clearly defined.

It has been argued that coping is situation specific, meaning that the appropriateness of a coping strategy may be related to the stressor and particular strategies could be more suitable for certain difficulties than others (Kneebone & Martin, 2003; Lazarus & Folkman, 1984). To exemplify, emotional-based strategies, in particular denial, have been found to buffer carer depression in caregivers of individuals with a traumatic brain injury (Verhaeghe et al., 2005). Consequently this emotion-focused coping strategy can be considered functional within this population (Verhaeghe et al., 2005), therefore caution should be exercised when using emotional and problem focused as a method of labelling dysfunctional and functional coping.

This may be an important issue when researching CGID, as these individuals are dealing with situations that cannot be changed; including the gradual loss of someone close to them (Kneebone & Martin, 2003; Pruchno & Resch 1989). Studies indicate that over 50 percent of carers experience anticipatory grief reactions prior to the death of the individual for whom they care (Adams & Sander, 2004; Kübler-Ross & Kessler, 2005; Verhaeghe et al., 2005; Walker & Pomeroy, 1996). It has been proposed that acceptance (an emotional-focused) may be the most effective way to ultimately deal with grief (Kübler-Ross & Kessler, 2005). As such it seems logical to conclude that emotional based strategies may be more appropriate at dealing with some aspects of distress (Kneebone & Martin, 2003).

The use of emotional-based strategies is supported by Kneebone and Martin (2003), who conducted a review into research analysing coping

and CGID and concluded that clinicians should help CGID develop problem-solving skills when solutions were available, and aid them using acceptance as a response when solutions were not available. Despite these recommendations they also concluded that regardless of the wide body of research into coping and CGID, much of the work did not relate directly to and inform clinical practice to an adequate level (Kneebone & Martin, 2003). A review of the research into interventions to decrease CGID distress has also highlighted this weakness, stating that the research has been overly focused on statistical significance and has relatively over looked clinical significance (actual impact on the carer) (Sörensen et al., 2006). Those studies that have looked at the effectiveness of reducing distress have been most effective at reducing depression, but have been less successful at decreasing anxiety (Sörensen et al., 2006).

Kneebone and Martin (2003) suggested that this relative lack of progress indicated that further research should focus on other aspects of Lazarus and Folkman's (1984) model, such as factors which affect the primary and secondary appraisals (Kneebone & Martin, 2003).

This leads us to consider the role of appraisals in stress and coping in CGID and the factors that influence them. Secondary appraisals are considered to be influenced by psychological factors such as self-efficacy (Benight et al., 1999; Lazarus, 1966; Naughton, 1997; Verhaeghe et al., 2005).

4. Self-efficacy

Self-efficacy (SE) refers to an individual's belief in their ability to efficiently and effectively deal with a specific situation (Ehrenberg &

Cox, 1991; Pajares, 1997; Perraud, 2000). SE is domain specific (Schwarzer & Schmitz, 2004), meaning an individual can have high SE in one domain i.e. coping, but low in another such as education.

SE forms part of a person's self-concept; it differs from constructs such as locus of control and self-esteem (self-worth) in three ways (Schwarzer & Schmitz, 2004). Firstly it refers to future behaviours; secondly, it implies an internal attribution that the individuals themselves are the cause of the behaviour (Schwarzer & Schmitz, 2004). Thirdly, it is an operative construct, meaning that it is proximal to a critical behaviour and therefore a good predictor of that behaviour (Schwarzer & Schmitz, 2004).

SE is different from confidence, in that confidence refers only to the strength of an individual's belief (Bandura, 1997). SE includes both a verification of an individual's certainty in a belief that they are capable of accomplishing the task to a certain level, and a rating of the strength of that belief (Bandura, 1997). Confidence also tends to be used as a catchword, while SE is a core construct of social cognitive theory (Bandura, 1989; Schwarzer & Schmitz, 2004).

According to Bandura's (1986) social cognitive theory, individuals have a 'self-system' which acts as a reference system and has a set of subfunctions including behavioural observation, regulation and evaluation (Pajares, 1997). This self-system allows an individual to exert a measure of control over their thoughts, feelings, motivation and actions (Bandura, 2005; Pajares, 2002; 1997).

Social cognitive theory views individuals as proactive, self-organising, self-reflecting and self-regulating (Pajares, 2002). They are therefore considered to be capable of influencing their own actions (Bandura, 2005; Bandura, 1997; Pajares, 2002; 1997). Bandura (1989) stated that because people can partly self-determine their judgements and actions, they have the capacity to change both themselves and the situation they are in. People are therefore referred to as agents of their own actions (Bandura, 1997; Pajares, 2002). As a result, under social cognitive theory people are seen as both creators and creations of their environment and social systems (Pajares, 2002). It is hypothesised that SE beliefs provide the basis of human motivation, playing a key role in behavioural change (Bandura, 1989; 2005; Pajares, 1997, 2002; Schwarzer, 1992; Schwarzer & Schmitz, 2004). They are considered a potent predictor of future behaviour and often as a better predictor than past behaviour (Schwarzer & Schmitz, 2004).

5. Self-efficacy, coping and distress

Schwarzer and Schmitz (2004) proposed that people predict either optimistic or pessimistic scenarios in line with their level of self-efficacy. These thoughts are then used to pre-fashion behaviours, those with a higher SE view difficult tasks as challenges as opposed to threats (Pajares, 1997; Schwarzer & Schmitz, 2004). They tend to visualise themselves as being successful, these visualisations are then turned into a positive guide and used to aid future performance. Individuals with a higher sense of SE will therefore set higher personal goals for themselves (Bandura, 1989; Pajares, 1997; Perraud, 2000; Schwarzer, 1992), put more effort and commitment

into achieving these goals, and persevere for longer when encountering obstacles as they expect a positive outcome (Bandura, 1989; Pajares, 1997; Perraud, 2000; Schwarzer, 1992; Schwarzer & Schmitz, 2004).

In contrast, individuals with a low sense of self-efficacy will visualise scenarios in which they fail and will dwell on what could go wrong (Bandura, 1989). They harbour doubts about their abilities, find it hard to get motivated or set goals for themselves, and often perform erratically as they believe they do not have what it takes to be successful (Bandura, 1989; Schwarzer & Schmitz, 2004). An individual's behaviour is considered to be mediated by their beliefs about their capabilities, and not their actual capabilities (Pajares, 1997; 2002). This in turn is proposed to affect the levels of distress they experienced; low SE is associated with pessimistic thoughts, low self-esteem, anxiety, helplessness and depression (Bandura 1997, 1989; Schwarzer & Schmitz, 2004, 1992).

Under the cognitive behavioural framework, depression can be formulated as a dysfunction in self-monitoring, self-evaluation or self-reinforcement (Ehrenberg & Cox, 1991). A number of studies have considered SE and distress in non-caregiving populations. Ehrenberg and Cox (1991) investigated the relationship between SE and depression in 166 adolescents using regression analysis and found that high social SE was associated with an absence of depression. They observed that depressed individuals acquired a sense of inadequacy when they perceived their social SE as falling short of what is apparently required (Ehrenberg & Cox, 1991). It has been proposed that the presence of low SE expectations is universal within depressed populations (Ehrenberg & Cox, 1991).

Their findings have been supported by Muris's (2002) research, which investigated the relationship between self-efficacy and symptoms of anxiety disorders and depression in an adolescent sample (N=596). Findings indicated that those with low self-efficacy typically had high levels of trait anxiety, anxiety disorder and depressive symptoms. Results of both these studies should be considered with caution as both were conducted with a non-caregiving teenage population, as such the stressors faced and life cycle stages are likely to be very different to those of CGID, meaning that the results may not be applicable to CGID.

Bandura (1989) considered stress in a similar way to Lazarus and Folkman's (1984), proposing that an individual's perception of threat is related to the perceived match between their coping capabilities and the potential demands that may be placed upon them. Bandura (1989) however offers an alternative to the functional/ dysfunctional coping strategy dichotomy which appears to be prevailing within coping and caregiver research. Bandura suggests that individuals who deem themselves as unable to manage a stressor will dwell on the deficits within their coping abilities and experience higher levels of stress (Bandura, 1989).

Although it has been suggested that there is an important association between SE and coping, there appears to be a lack of research focusing on CGID within this area. Oportot (2004) conducted a cross-sectional investigation into caregiver SE and coping within female spouses and daughters of individuals with Alzheimer's disease. The study included 142 caregivers and found that those with higher SE engaged in more problem-focused coping behaviour, while those with

lower caregiving self-efficacy used mostly emotion-focused coping behaviour (Oportot, 2004). However this study only included wives and daughters and therefore may not be applicable to male carers.

Coping self efficacy (CSE) is a domain specific measure of SE; it can be used to measure problem, emotion and social coping separately or collectively (Chesney et al., 2006). An additional advantage of considering CSE, over actual coping strategy used, is that evidence indicates that an individual's CSE can be increased (Gattuso et al., 1992), suggesting that research into this area has potential relevance to clinical interventions.

Bandura (1997) proposed that there are four key ways by which a person's SE can be changed; including mastery experience, vicarious experience, verbal persuasion and physiological states. Mastery experiences are gained from positive experiences of past performances and are considered the most influential of the four sources (Pajares, 1997; Schwarzer & Schmitz, 2004). Vicarious experience which is considered to be a slightly weaker source, involves the social comparison of someone similar, successfully mastering a difficult situation (Pajares, 1997; Schwarzer & Schmitz, 2004).

A weaker source still is that of verbal persuasion, it entails other people providing information in the form of verbal judgements (Pajares, 1997; Schwarzer & Schmitz, 2004). This is only deemed to be effective if the persuaders are providing genuine encouragement or praise (Pajares, 1997; Schwarzer & Schmitz, 2004). This may explain the finding that though cognitive-behavioural interventions have been found to increase SE, they have been reported to work

slowly within depressed populations (Kavanagh & Wilson, 1998; Lawrence et al., 1994).

The weakest source is physiological states such as anxiety; to illustrate, an individual may be so anxious that they feel they are unable to master the situation (Pajares, 1997; Schwarzer & Schmitz, 2004). It has been found that increasing an individual's level of CSE resulted in lowered levels of distress, including depression (Gattuso et al., 1992). This is evidenced by a number of studies which have focused on physical forms of anxiety manifestation, including autonomic arousal and plasma catecholamine secretion (Bandura et al., 1982; 1985; Bandura, 1989). These studies demonstrated when low SE beliefs are decreased there was a substantial increase in physiological arousal, and the reverse happened when SE beliefs were strengthened (Bandura et al., 1982; 1985; Bandura, 1989).

This is further supported by Chesney et al.'s (2006) study. Two randomised clinical trials were conducted (N1=149, N2=199, total N=248), to evaluate a theory-based coping effectiveness training (CET) intervention designed to decrease psychological distress and heighten positive mood, in individuals coping with a chronic illness (HIV) (Chesney et al., 2006). All three hundred and forty-eight men who participated were homosexual, HIV-positive and expressed depressed moods (Chesney et al., 2006). They found by using predictive validity analysis that residual change in using both problem and emotional focused coping skills were predictive of decreased psychological distress and heightened psychological well-being (Chesney et al., 2006). It must be noted that none of these intervention based studies included caregivers and due to the unique

and multifaceted nature of the role of CGID, the results may not be applicable.

It has been proposed that coping self-efficacy (CSE) beliefs influence the type of coping used. When CSE perceptions are low, more energy is directed at managing the individual's emotional distress, using emotion-focused strategies (Benight et al., 1999), whereas when CSE beliefs are high an individual will invest their energy into rectifying the situation using problem-focused coping strategies (Benight et al., 1999). This indicates that high CSE may enable the individual to select the most appropriate coping strategy for the situation.

CSE provides an alternative measurement of coping and is particularly suitable for the measurement of intervention-associated changes related to coping (Folman & Moskowitz, 2004; Chesney et al., 2006). CSE focuses on changes in a person's belief in their ability to cope effectively which, under SE theory, is considered an important prerequisite to changing coping behaviour (Bandura, 1997; Chesney et al., 2006).

To summarise, carer factors such as coping have been linked to carer distress, in particular, SE has been connected to differences in motivation, coping and distress. All of these constructs form an important component of attachment theory, which is an important theory of distress regulation and relationship styles.

6. Attachment

Attachment is an innate motivational system designed to promote safety and survival (Bowlby 1973; Fraley & Shaver, 2000). The goals of attachment are the maintenance of physical and psychological proximity to a nurturing adult, who can ward off danger and provide security; as such it affects individuals cognitively, physically and emotionally (Bowlby, 1969, 1973, 1980; Fraley & Shaver, 2000).

Bowlby (1973) proposed that infants form an attachment bond with one or more individuals (usually their mother) within the first nine months of life (Bowlby, 1973). The role of the attachment bond is to provide security and protection, thereby the main function of the attachment figure is to provide a secure base from which the child can explore the world, or retreat to in times of distress (Browne & Shlosberg, 2006).

Attachment behaviour has been defined as any type of behaviour which results in the attaining or retaining of proximity to an individual who is perceived as being stronger and/or wiser (Bowlby, 1973). In threatening or unfamiliar situations, such as when the mother (or attachment figure) is absent, attachment behaviours include manifestations of distress and anxiety ranging from the simple visual searching to heightened emotional displays and activities such as crying and clinging (Bowlby, 1973; Browne & Shlosberg, 2006; Fraley & Shaver, 2000). When comfort, safety and security are re-established, for example by regaining proximity to the caregiver, these attachment behaviours will decrease (Fraley & Shaver, 2000). As a result, attachment behaviour is often cited as being activated in times of danger, distress and novelty (Bowlby, 1969).

The core principle of Bowlby's attachment theory is that an individual's bond with their primary caregiver in childhood affects their psychological adjustment and coping (Wei et al., 2003). This bond can be described in terms of a secure or an insecure attachment style (Bowlby, 1969; Alexander et al., 1998; Holmes, 2005; Maunder et al., 2006; Mikulincer & Florian, 2004). Unresponsive caregiving, whether it be of a consistent or inconsistent nature, results in a child developing an insecure attachment (Wei et al., 2003). Conversely, consistent responsive care giving leads to the development of a secure attachment style (Wei et al., 2003).

Subsequent to Bowlby's theory (1969, 1973, 1980) an experimental paradigm termed the strange situation (Ainsworth et al., 1978) was developed which examined reactions of children to being separated from their caregivers for short periods of time before being reunited (Ainsworth et al., 1978; Bartholomew & Horowitz, 1991; Browne & Shlosberg, 2006). This work helped identify three predominant patterns of attachment style: secure, anxious avoidant and anxious ambivalent (Ainsworth et al., 1978).

After separation, infants with a secure attachment style could be distinguished by their reaction to the caregivers return; they welcomed them, sought them out when distressed, and were relatively easily comforted (Bartholomew & Horowitz, 1991; Mikulincer et al., 1993). In contrast, avoidant infants are distinguished by their avoidance of interaction and lack of emotional response to the return of their caregiver (Bartholomew & Horowitz, 1991). Whereas those classified by Ainsworth as anxious ambivalent displayed hesitant behaviour towards their caregiver and failed to be comforted when reunited (Bartholomew & Horowitz, 1991).

Ainsworth et al.(1978) highlighted the substantial contribution of parents in the creation of infant attachment, with parental sensitivity and responsiveness being a key determinant of secure attachment (Browne & Shlosberg, 2006). The continuity of attachment pattern appears to be largely mediated by the ongoing quality of the primary attachment relationships within early life (Bartholomew & Horowitz, 1991).

Attachment styles are assumed to result in infants internalising their experience with their caregiver, and their expectations about whether or not they were available during stressful or threatening situations (Mikulincer et al., 1993). Bowlby (1973) labelled these internal representations as 'internal working models'. Working models reflect early caregiving experiences which become generalized beyond the parent-child relationship influencing cognitions, affect, and behaviours which guide reactions within new relationships at an unconscious level (Fraley & Shaver, 2000; Hardy, 2007).

Secure and insecure attachment styles correspond with different 'internal working models' (mental representation) of the self and others (Alexander et al., 1998; Maunder et al., 2006). Those with an insecure attachment are deemed to possess a negative working model, for example they may believe they are unlovable (Wei et al., 2003). Conversely secure attachment is consistent with parenting which contains distress levels and enables the development of a positive internalised model (Browne & Shlosberg, 2006).

Working models affect the way individuals interact in relationships, particularly at stressful times (Holmes, 2005; LoboPrabhu et al., 2006;

Maunder et al., 2006); therefore, working models can be considered the key way of observing the continuation of attachment style from childhood to adulthood (Bowlby, 1973).

Hazan and Shaver (1987) proposed that the patterns of attachment described by Ainsworth (secure, anxious ambivalent and anxious-avoidant) were conceptually similar to that seen in romantic relationships consequently they used Ainsworth's category system as a framework for their initial research into romantic attachment (Bartholomew & Horowitz, 1991; Hazan & Shaver, 1987).

Securely attached individuals are characterized by a realistic sense of self-efficacy and trust in others (Browne & Shlosberg, 2006), they also tend to acknowledge stress and manage negative emotions constructively (Collins & Reed, 1990; Browne & Shlosberg, 2006; Feeney & Noller, 1990). Those with an anxious ambivalent style are characterized by feelings of helplessness, anxiety, emotional instability, and tend to have abandonment worries and jealousy within relationships (Mikulincer et al., 1993). Those with avoidant attachment have a fear of intimacy, closeness and find it difficult to depend on others (Mikulincer et al., 1993).

According to Hazan and Shaver (1987), people use internal working models within new relationships to help them predict how others are likely to behave and feel towards them, thereby using these models to interpret other people's intentions (Fraley & Shaver, 2000). Internal working models are considered to be highly resistant to change; new information that is not easily assimilated within their existing framework is likely to be distorted in order to fit (Fraley & Shaver, 2000). In this manner, a consistency is maintained in the way the internal working

model makes people interact within close relationships (Fraley & Shaver, 2000). For example, those with avoidant attachment may feel little distress and some sense of relief when a relationship breaks down (Feeney & Nollar, 1992).

Hazan and Shavers (1987) developed a brief attachment scale using multi-sentence descriptions of the three attachment styles. For example their description of avoidant attachment was *"I am somewhat uncomfortable being close to others; I find it difficult to trust them completely and difficult to allow myself to depend on them. I'm nervous when anyone gets too close, and often, others want me to be more intimate than I'm comfortable being"* (Hazan & Shaver, 1987).

Bartholomew and Horowitz (1991) noticed that the avoidant category proposed by Hazan & Shaver was actually composed of two distinct forms of avoidance; fearful avoidance and dismissing avoidance. On this basis Bartholomew and Horowitz (1991) proposed a four category model of adult attachment style; secure, anxious ambivalent, dismissive avoidant and fearful avoidant. Nevertheless, some researchers continue to use the 3-category model making it difficult to compare findings. The situation is further complicated by differing research paradigms that have emerged between researchers who use self-report measures, such as those based on Bartholomew and Horowitz model compared with semi structured attachment interviews.

Examination of these differing subfields reveals that attachment is a powerful theory, which is relevant throughout a person's life span. Not only has attachment to parents been found to be salient throughout an individual's lifetime but it appears to remain very important to personal well-being and sense of self (Cicirelli, 1983;

Browne & Shlosberg, 2006). Furthermore, cross-sectional research indicates that adolescents and adults were likely to nominate a close friend or romantic partner as their attachment figure, indicating the importance of attachment across a number of relationships (Fraley & Shaver, 2000).

To date, the majority of adult attachment research had focused on romantic relationships (Fraley & Shaver, 2000); however attachment research has evolved and now incorporates an array of attachments including friendship and sibling relationships (Hazan & Shaver, 1987; Fraley & Shaver, 2000).

6.1 Attachment, distress and coping

Attachment is also believed to be inextricably linked to an individual's experiences of stress (Kemp & Neimeyer, 1999; Mikulincer, 1993; Simpson et al., 1992). Exposure to stress is believed to activate an individual's internal working model of attachment, and therefore trigger different stress responses in line with their style of attachment (Kemp & Neimeyer, 1999; Mikulincer et al., 1993; Simpson et al., 1992).

The relationship between secure attachment and positive psychological well-being has been well documented amongst adults (Bartholomew & Horowitz, 1991; Shaver & Hazan, 1993; Simpson, 1990); it is believed to act as a buffer against the effects of stress and emotional distress (Mikulincer, et al., 1993). Conversely, insecure attachment is associated with problems of emotional adjustment (Kobak & Sceery, 1988)

Two key aetiological theories of depression are the Cognitive and Interpersonal models (Hankin et al., 2008). Although both of these

models have a good body of empirical support individually, only a limited number of theorists have attempted to create a more comprehensive model of depression by combining these into an integrative cognitive-interpersonal theory (Hankin et al., 2008). They hypothesize that individuals with an insecure attachment style are likely to form negative representations of themselves, and others; increasing their risk of developing depression (Hankin et al., 2008).

Hankin, Kassel and Abela (2008) conducted three prospective studies to examine the relationship between adult attachment dimensions, anxiety and depression. Results from the three studies indicated that avoidant and anxious symptoms prospectively predicted depressive symptoms (Hankin et al., 2008). Anxious attachment was also associated with anxiety symptoms (Hankin et al., 2008).

Further support comes from the study by Kemp and Neimeyers (1999) in undergraduate psychology students (N= 193); 47 were classified secure; 52 as fearful, 51 as preoccupied and 43 as dismissing. The results supported the hypothesis that securely attached individuals had less intrusive distressing thoughts after stressful events and experienced lower levels of psychological distress (Kemp & Neimeyer, 1999). This suggests that attachment may facilitate the development of personal resources, which help the individual successfully deal with stressful situations. However, college students, in general, are a relatively young high functioning group who are at a transitional development stage in between parent and peer attachment, therefore the results may not be relevant to CGID (Kemp & Neimeyer, 1999).

Mikulincer et al. (1993) have criticized researchers for not assessing whether the individual's attachment style is related to their emotional

adjustment to specific life events. In an attempt to address this issue Mikulincer et al. (1993) examined the role of attachment style during and after a real life traumatic event; namely missile attacks during the Gulf war. Israeli students (N=140) were interviewed two weeks post war and were then classified both by attachment style (secure, avoidant or ambivalent) and by where they lived (dangerous vs. less dangerous) (Mikulincer et al., 1993). In the 'dangerous' group, individuals defined as ambivalent reported more distress, while those classified as avoidant reported higher levels of somatization and hostility, than those in the secure attachment group (Mikulincer et al., 1993).

Differences were also evident in the types of coping used. Secure individuals used relatively more support seeking strategies, the ambivalent group used more emotion focused strategies, and the avoidant group utilised more distancing strategies (Mikulincer et al., 1993). Mikulincer et al. (1993) also suggested differences in an individual's sense of self-efficacy and control that underlies different attachment style may be important in the relationship between attachment, coping and distress and that further research is required in this area.

Another important aspect of Mikulincer et al.'s (1993) research is that it indicates the direction of the relationship between attachment and distress. They compared the distribution of attachment styles of the individuals living in dangerous and less dangerous areas; however no difference was evident between the two localities. This signifies that the stressful events did not affect attachment style, but rather, it is attachment style that affects the individuals stress response (Mikulincer et al., 1993). This study, although informative, is limited by

its use of retrospective measures, which could have resulted in memory bias; however, considering the time spans involved any bias is likely to have been minimal.

The study does support the view that secure attachment acts as a personal resource to facilitate successful outcomes in stressful situations (Mikulincer et al., 1993). It is proposed that these personal resources are manifested in optimistic expectations (Shaver & Hazan, 1994), a strong sense of control, self-efficacy (Collins & Read, 1990) and self confidence (Mikulincer et al., 1993).

Every attachment experience across an individual's life span teaches or reinforces the idea that life's adversities are manageable, thus leading to a fostering of a stable internal working model that buffers emotional distress (Mikulincer et al., 1993). There is a strong body of evidence supporting an association between secure attachment and adaptive coping (Alexander et al., 1998; Bowlby, 1969; Holmes, 2005; Maunder et al., 2006; Mikulincer & Florian, 2004).

In contrast, individuals with an insecure attachment (avoidant and ambivalent) have been subjected to unstable and unpredictable regulation of distress by their caretakers (Bowlby, 1973; Mikulincer et al., 1993 Shaver & Hazan, 1994). These experiences are generalized into their working model to form beliefs that life's adversities are irreversible and uncontrollable (Mikulincer et al., 1993). Individuals with an insecure attachment may react with strong emotional distress to stressful situations (Mikulincer et al., 1993). Feelings of helplessness and lack of perceived support, created by their lack of secure attachment bonds, may prevent them from working through distress and being able to put it behind them (Mikulincer et al., 1993). As a

result, insecure attachment appears to not only place an individual at a higher risk of developing problems but also causes them to be less equipped to cope with those problems (Shaver & Hazan, 1994).

Individuals with an ambivalent or avoidant attachment style differ in the way they cope; ambivalent individuals are more hyper vigilant to sources of distress while those who are avoidant divert negative emotions out of their awareness (Mikulincer et al., 1993; Kobak & Sceery, 1988 ; Mikulincer et al., 1990).

To summarise, attachment theory provides a framework for understanding relationship styles and distress regulation. Attachment styles and internal working models are activated at times of stress; these can either act as a buffer to or increase distress or act as a buffer to distress.

Caregiving can be considered as both an interpersonal and extremely stressful role as stated "*Caregivers therefore do not just encounter 'persons with dementia' but 'persons experiencing a disaster'*" (Miesen, 2006, p122). This leads us to consider how attachment theory can inform our understanding of caregiving.

6.2 Attachment and caregiving

From an attachment theory perspective the caregiving system is considered to be inherently altruistic (Gillath et al., 2005). Attachment researchers propose that though attachment and caregiving form separate behavioural systems, attachment affects caregiving behaviour (Bowlby, 1980; George & Solomon, 1999 in Gillath et al., 2005).

Loboprabhu (2006) proposed that different attachment styles were characterised by different caregiving patterns; secure attachment styles are linked to positive feelings between caregiver and care receiver, while insecure attachment resulted in avoidance and ambivalence within their relationships (Loboprabhu, 2006). Gillath et al., (2005) explained this by stating that people have a tendency to care for dependent or needy individuals, but that this can be suppressed or overwritten by insecure attachment. For example, when an individual is threatened they will often seek support and comfort for themselves before considering giving care to others (Gillath et al., 2005).

Those with an anxious attachment tend to be more empathic to the suffering of others (Gillath et al., 2005; Mikulincer et al., 2003), causing them personal distress; which they become preoccupied with. As a result this leaves them with insufficient mental and emotional resources to adequately provide sensitive and effective care to others (Gillath et al., 2005; Mikulincer et al., 2003). In contrast individuals with high levels of avoidant attachment will have less empathic reactions to others suffering, they therefore feel less personal distress (Gillath et al., 2005). Due to this lower distress they are more capable of providing help; however, they tend not give it as their lack of empathy leaves them unaware that help is required (Gillath et al., 2005). In summary, those with anxious attachment see the need but do not have the resource to care, whereas those with avoidant attachment have the resources but do not see the need to use them. In contrast, securely attached individuals are able to see others as needing help, and have the emotional resources to assist (Gillath et al., 2005).

Support for this theory comes from research into caregiving towards partners (Gillath et al., 2005). Simpson et al. (2002) conducted a study on attachment levels and supportive behaviour in heterosexual dating couples. The couples were observed whilst the male partner was waiting to take part in a stress provoking task (Simpson et al., 2002). Observers rated the supporting behaviour of the females towards her partner and the support seeking behaviours of the male subjects (Simpson et al., 2002). It was observed that females with higher levels of secure attachment offered more support to partners when it was sought, compared with less secure women who provided a lower level of support regardless of how much support their partners wanted (Simpson et al., 2002). It should be noted that this study was conducted in young adults (17-24 years) and the mean length of the relationship was relatively short (18 months). Thus suggesting that results of this study may not be applicable to a older population or individuals in longer term relationships.

Despite it appearing that individuals with a secure attachment are better equipped to become caregivers, research indicates that many individuals with insecure attachment styles also become caregivers (Cooper, Owens et al., 2008). It is therefore important to understand how attachment affects levels of distress in caregivers. One study which considered this was Cicirelli's (1993) investigation into daughters providing care to their mothers. This study indicated a positive relationship between attachment style and care provided by the daughters (Cicirelli, 1993). Furthermore, when the care receiver's functional ability was controlled, having a stronger attachment bond was associated with lower subjective burden (Cicirelli, 1993).

Importance of attachment is further evidenced by Carpenter's (2001) investigation into attachment bonds between adult daughters (N= 80) and their mothers. Caregiving stress was found to be mediated by a more secure attachment bond; attachment was also discovered to correlate to the amount of emotional but not practical care the daughter provided (Carpenter, 2001). It needs to be acknowledged that only mother-daughter dyads were considered therefore we can not be sure if similar results would be found in other relationship dyads i.e. father-daughter.

Research considering other types of dyads also supports these findings, for example Daire's (2002) investigation into the role of attachment in sons (N= 40) caring for a parent with dementia. Sons with higher levels of attachment attributed less distress to their care giving role. This is supported by a larger scale American study by Crispi et al. (1997) which investigated attachment and burden in adult children (sons and daughters) caring for a parent with dementia (N=108). It was demonstrated that secure attachment predicted lower care giving difficulty, burden and levels of psychological symptomatology (Crispi et al., 1997). However, the three aforementioned studies were all based in the United States which means that cultural factors may prevent the results being generalised to British caregivers.

The type of support that carers benefit from has been shown to be related to their attachment style. The benefits of social support on distress have been disputed, with some studies reporting it as beneficial (Cohen & Willis, 1985) and others as non-beneficial or even harmful (Bolger et al., 1986). Inconsistencies prompted a number of researchers to investigate the issue further. It was concluded that

attachment based differences in the way individuals respond to different types of support, for example individuals with an avoidant attachment style respond negatively to emotional based support interventions (Collins & Feeney, 2004; Mikulincer & Florian, 1997; Simpson et al., 2007).

Additionally, attachment has been associated with differences in conflict resolution. The caregiving experience is such that daily problems are common and can lead to a lack of empathy and result in friction between those providing and receiving care (Loboprabhu, 2006). Loboprabhu (2006) advocates that successful resolution of these difficulties improves the caregiving relationship, in contrast inadequate resolution weakens it. Insecure attachment can lead to pathological styles of caregiving including compulsive caregiving, defensive separation and excessive dependency (Bowlby, 1969, 1973). This can produce interpersonal conflict, creating a vicious cycle and the emergence of feelings of depression and guilt (Loboprabhu, 2006).

From the care receiver's perspective, there has been a growth of interest in attachment theory and people with dementia. This reflects the recent shift from medical models of dementia care towards a more person centred holistic approach, which seeks to put emphasis on the subjective experience of the person with dementia (Kitwood, 1997). Individuals with dementia with an insecure attachment style often find it more difficult to accept and ask for the help required (Miesen, 2006). Attachment style has been found to affect the effectiveness of interventions such as 'simulation presence therapy' (uses tapes of partner's voice) (Miesen, 2006). In individuals with an insecure attachment style the tapes appear to have an agitating effect, but in

those with a secure attachment style it has a calming effect (Miesen, 2006). Attachment style of the care receiver has also been found to have an impact on their carers; carers of securely attached care receivers reported less caregiver burden (Magai et al.'s, 1997). It should however be considered that the majority of research into carer recipient and has used retrospective informant ratings to measure their attachment style; therefore the results may be influenced by reporter bias (Browne & Shlosberg, 2006).

To summarise so far, CGID are a growing population within our society and face a very challenging role that places them at risk of developing anxiety, depression and stress. The role of relationship styles, in particular internal working models and their effect on SE, coping and distress levels in caregivers has been discussed. Secure attachment and its corresponding internal working model have been associated with higher levels of SE, positive coping strategies and less distress.

SE has also been identified as a prerequisite to choice of coping strategy. High SE has been found to be linked to less distress and differences in motivation and behaviour. It has been established that SE beliefs are amenable to change under the right conditions. Furthermore CSE has been identified as a method of looking at the domain specific issue of coping. Overall, two elements have been identified as being extremely important to caregiver distress; namely attachment security and CSE.

7. Attachment, CSE and distress

One study which has considered these elements was that by Grice (1999). Research was conducted into attachment, SE, race and gender in those over the age of sixty-five. Three hundred and seventeen participants, each classified as either anxiously (15%), securely (65%) or avoidant (20%) attached were assessed. Significant differences were found in the levels of depression, anxiety and SE associated with each of the attachment styles. Secure attachment was associated with the highest levels of SE and the lowest levels of depression and anxiety.

This study indicates that the role of attachment, self-efficacy and distress in carers is worth investigating further and it raises questions about causality; does one of these variables influence the other two? Wei et al.'s (2005), research investigated this question in a longitudinal study, of undergraduate students (N= 308). They examined whether social SE and self-disclosure act as mediators between attachment, feeling of loneliness and depression. They used a dimensional approach to measure attachment, and found that social SE mediated the relationship between attachment anxiety, feelings of loneliness and depression in those with high levels of attachment anxiety, but not for those with high attachment avoidance (Wei et al., 2005). It was concluded that these findings corresponded with the attachment theory, stating that those with high avoidance tend to be compulsively self-reliant and therefore are likely to describe higher levels of social self-efficacy (Wei et al., 2005).

Neither Grice's (1999) or Wei et al.'s (2005) research used a measure of CSE; as CSE is a domain specific measure of SE, it may not have



the same relationship with attachment and distress as other measures of SE. It does however indicate that CSE could mediate the relationship between attachment and distress in CGID.

As CSE is deemed to be an operative construct (Schwarzer & Schmitz, 2004), meaning that it should be proximal to coping and therefore could be considered to be a good predictor of coping behaviour. CSE beliefs can be regarded as critical in the choice of coping strategy (Benight et al., 1999). This means that investigations into the role of coping as a mediator between attachment and distress could potentially be used to infer the relationship between CSE relationship and other variables. Wei et al.'s (2003) study examined the role of perceived coping as a mediator between attachment and psychological distress in undergraduate students (N=515). Results were analysed using a structural equation modelling approach, and demonstrated that 'perceived coping' fully mediated the relationship between attachment anxiety and psychological distress. Perceived coping also partially mediated the relationship between attachment avoidance and psychological distress (Wei et al., 2003).

A limitation of the three aforementioned studies (Grice, 1999; Wei et al., 2003, 2005) is that none of them included carers or a U.K. based population, meaning the results may not be meaningful to CGID based in the UK. They also used only older (over 65 years of age) (Grice, 1999) and younger adults (undergraduates) (Wei et al., 2003, 2005) and therefore due to life stage differences the results may not be generalizable to those in other age groups.

Cooper, Ownes et al. (2008) claim to be the first to test the hypothesis that carer burden and coping strategies mediate the

relationship between attachment style and anxiety in CGID. The study included 83 individuals with dementia and their family carers, originally recruited for a larger community study (Cooper, Owens et al., 2008). Each carer was interviewed and assessed using the Hospital Anxiety and Depression (HAD) scale, the COPE (measure of coping strategy) and the Zarit-Burden interview (to measure burden) (Cooper, Owens et al., 2008).

Data was analysed using structural equation modelling (Cooper, Owens et al., 2008). Results supported the author's model that coping mediated the relationship between attachment and anxiety (Cooper, Owens et al., 2008). Carers with less secure or more avoidant attachment styles reported higher anxiety; this connection was partially mediated by increased use of dysfunctional coping strategies (Cooper, Owens et al., 2008). It was also observed that caring for someone with greater ADL impairments was associated with more anxiety, and that less impairment was reported by more securely attached carers. It was suggested that their findings indicated that carers with less secure attachment styles used ineffective coping strategies which increased their vulnerability to anxiety (Cooper, Owens et al., 2008).

There are limitations to the Cooper, Owens et al. (2008) study; only a limited number of their carers were rated as insecurely attached and only carers who had been caring for over 18 months were included. The results therefore, may not be fully representative of CGID as it is possible that those who experience the greatest distress will do so within the initial 18 month period. A further criticism of this study is its use of 3 category model of attachment style; each category was rated with a separate continuous score. There has been some debate within the literature as to whether

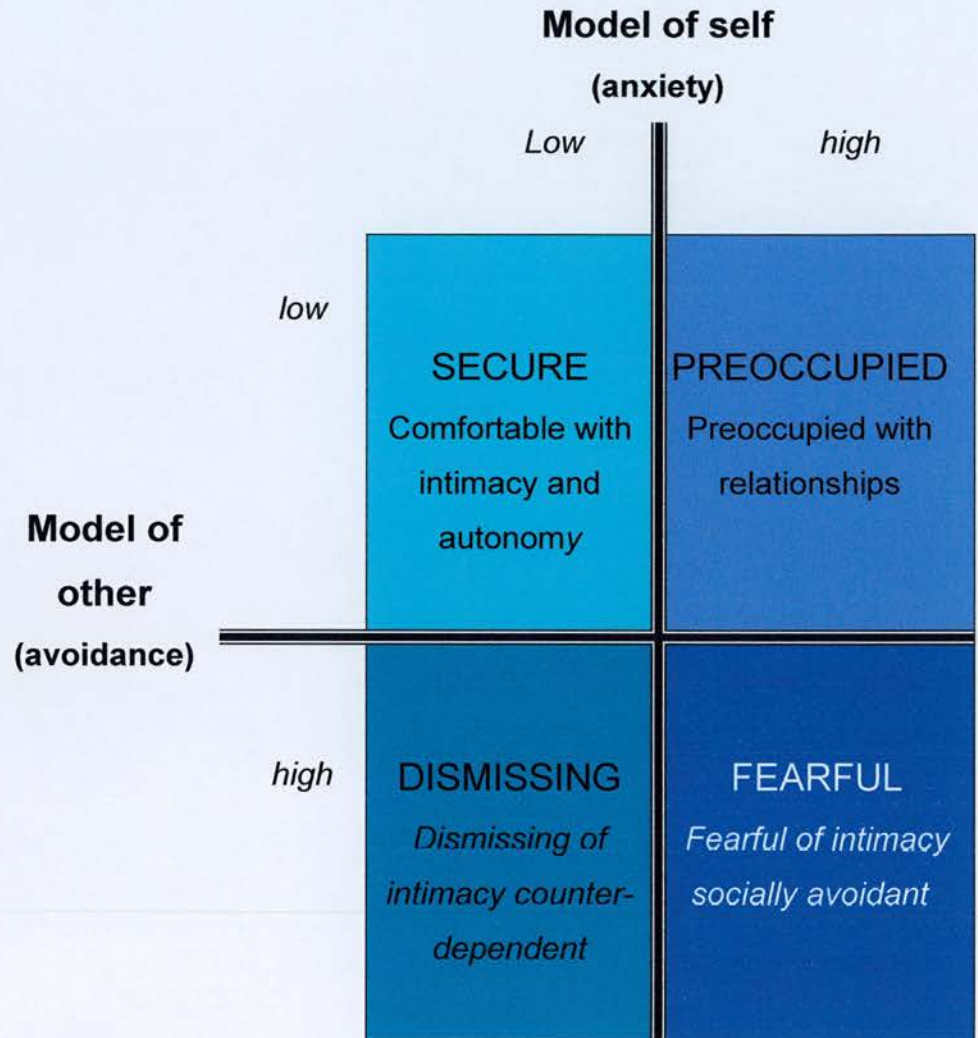
attachment styles can still be considered in terms of distinct categories as used in the Cooper, Owens et al. (2008) study, or whether they should be considered as dimensions (Farley & Shaver, 1998; Fraley & Waller, 2000; Levy & Davis, 1988).

There has also been debate over which dimensions to use (Fraley & Shaver, 1998; Fraley & Waller, 2000). However, the majority of those who support the use of a dimensional approach, argue that in line with Bowlby's (1973) original theory, which incorporated two types of internal working models, that of self and that of others, there should be two different continuous axis (dimensions) (Bartholomew & Horowitz, 1991; Murphy & Bates, 1997) (Figure 1).

The model of self is typified by 'closest and dependence on others' (anxiety), while the model of others is characterized as 'avoidance of intimacy' (avoidance) (figure 1) (Bartholomew & Horowitz, 1991; Wei et al., 2003). Under this approach a person can be deemed to be high or low on each of the two dimensions (Bartholomew & Horowitz, 1991; Wei et al., 2003). Consequently, there are four possible attachment styles (secure, preoccupied/anxious ambivalent, dismissing/ dismissive avoidant and fearful avoidant) that can be generated by these two attachment dimensions (Wei et al., 2003) (Figure 1).

Figure 1

Representation of the four category dimensional model of attachment



(Replicated from Bartholomew & Horowitz, 1991, p 227)

It is worth noting that high ratings on the self-model correspond to low attachment anxiety, while high ratings on the other-model equate to high levels of avoidance. To illustrate, those with secure attachment are considered to be relatively free of attachment anxiety and

avoidance and so will present as having low self and other model dimensions of attachment (Wei et al., 2003). Conversely, those with a dismissive avoidant attachment have high avoidance (other-model) and low anxiety (self-model) (Murphy & Bates 1997).

Further support of the use of a dimensional approach is provided by Brennan et al.'s (1998) study. Their research investigated a number of models and measures using a total of 4320 self-report items from an array of inventories (Brennan et al., 1998). Their analysis supported the principle that individual differences in romantic attachment can be organized within a two-dimensional space model. The first dimension, corresponds with anxiety, fears of rejection and abandonment (Brennan, Clark & Shaver, 1998). The second dimension, avoidance, corresponds to discomfort with being dependent on, or intimate with others (Brennan, Clark & Shaver, 1998). These dimensions appeared to map onto the self and others dimensions respectively.

This is further evidenced in a study by Carnelley et al. (1994), which assessed attachment and reaction to others suffering. Using a four category model of attachment they compared depressed and non depressed college students. They found that depression was linked to mental representations of self but not of 'others' (Carnelley et al., 1994). Although neither of the above studies considers caregiving populations as their specific participants, they do provide converging evidence which advocates the use of the dimensional approach. This leads us to consider whether the results from Cooper, Owens et al. (2008) would have differed had they used this approach.

8. Study objectives

A review of the current literature has highlighted that there is a dearth of relevant studies in the research. Few studies have specifically considered CGID or investigated the exact processes occurring within a UK population. This study will seek to assess and analyse attachment, CSE and distress in CGID. The limited existing literature indicates that CSE may mediate (be a mechanism of change in) the relationship between attachment and distress, as opposed to simply moderating (affect the strength or direction of) it (Baron & Kenny, 1986).

It should be noted that it is possible within a statistical framework for CSE to act as both a mediator and a moderator (Baron & Kenny, 1986). Due to practical and statistically considerations however, such as the number of analysis which would be required, and obtaining power, this study will only focus on investigating if there is a mediation relationship. The primary objective of this study is therefore as follows.

Primary objective:

To investigate if coping self-efficacy will mediate the relationship between attachment security (positive self and other-model) and carer distress (anxiety, depression and perceived stress).

Following the recommendations of Baron and Kenny (1986) a number of criteria need to be met before a mediation relationship can be established (Tabachnick & Fidell, 2007). Firstly there needs to be a significant relationship between independent variable (IV)

(attachment) and dependent variable (DV) (distress) (Tabachnick & Fidell, 2007). Secondly, there needs to be a significant relationship between the IV (attachment) and the mediator (CSE) (Tabachnick & Fidell, 2007). Thirdly, there should be a significant association between the mediator (CSE) and the DV (distress) (Tabachnick & Fidell, 2007). For the purposes of this study the aforementioned criterion shall be referred to as secondary objectives and hypotheses.

Secondary objectives:

Hypothesis 1

Attachment security (positive self and other-model) is negatively associated with carer distress

Hypothesis 2

Coping self-efficacy is positively associated with attachment security (positive self and other- model).

Hypothesis 3

Coping self-efficacy is negatively associated with carer distress (anxiety, depression and perceived stress)

Chapter 2

Methods

1. Ethics

Ethical approval was gained from the University of Edinburgh and then from the North of Scotland Ethics Board (Appendix 1), who recommended a number of minor amendments be made (Appendix 2). Minor changes included the addition of a question on the background information questionnaire (Appendix 3) to measure the relationship between the participant and care receiver prior to the onset of the 'carer' role. The consent form was also removed from the research pack, in order to help maintain the confidentiality of participants' identities.

Due to a low response rate, the region of study was extended to cover England. The English NHS ethical boards contacted advised that the study did not require their approval to proceed as no NHS sites were being used.

2. Pilot study

A pilot study was conducted with three volunteers in order to determine how long the questionnaires took to complete and to establish ease of understanding for the participants. All volunteers were personally known to the author and had previous experience of providing care to a family member with a physical illness, though none were caring for someone with dementia at time of completing

the study. It was established that the questionnaires took approximately 20-30 minutes to complete.

It was also highlighted that it was not always clear whether the questionnaires concerned the carer or the care receiver. Therefore the questionnaires, which concerned the carer, had the words 'About you' typed at the top (Appendix 4). While the questionnaire concerning the person cared for, had the words 'About the person you care for' typed at the top (Appendix 5).

None of the questionnaire responses gained from this pilot study were used within the main study.

3. Participants

3.1 Power analysis

To the author's knowledge, there had been no prior study of this exact nature; therefore it was not possible to calculate sample size from previous research. However, Cooper, Owens et al. (2008) conducted a similar study, which investigated whether coping style mediated the relationship between attachment style and anxiety using a within subject design. The statistics from this study indicated that there was a medium effect size (Cooper, Owens et al., 2008).

Cohen's (1992) tables were then consulted to gauge the sample size required to achieve power with a medium effect size at the .05 level using multiple regression analysis with a maximum of 2 independent variables. The number of independent variables was ascertained by looking at the largest planned multiple regression (refer to chapter 3,

section 4). The resultant recommended sample size was 67 participants (Cohen, 1992).

3.2 Inclusion and exclusion criteria

To be eligible for inclusion in the study carers had to be 18 years of age or over, providing at least four hours a week of social, emotional or practical care to a family member or partner with dementia, on an unpaid basis. They also had to have sufficient proficiency in English to comprehend and complete the questionnaires. The inclusion criteria were set out within the information sheet (Appendix 6), which was given to all participants.

The researcher checked participants' responses on the demographic question (background information questionnaire) (Appendix 3) in order to ensure that these criteria were met.

4. Recruitment

Organisations providing services to carers were identified within the region of study (Scotland and England) using the internet and telephone directories. These carer organisations (CO) were contacted by email where possible; those without an email address were telephoned, to establish whether they would be willing to aid in the recruitment process. Out of the fifty organisations approached, seventeen were willing to be involved (Appendix 6). All caregivers of individuals with dementia (CGID) were recruited through these organisations, by one of three pathways; post, advertisements or the direct pathway.

4.1 Postal pathway

The postal pathway involved the researcher providing the CO with 'opt-in' packs, containing a letter of invitation (Appendix 7), information sheet (Appendix 8), opt-in slip (Appendix 9) and stamped addressed return envelope (with researcher's address). Each opt-in pack was placed in a stamped envelope and given to the CO. The CO was then responsible for adding the names and addresses of a convenient sample of CGID from their database. This ensured that the researcher had no access to the names and addresses of CGID and maintained participant anonymity. A total of 331 opt-in packs were posted by the COs and a total of 62 opt-in slips were returned by carers.

Those carers who returned their opt-in slips were then sent a research pack to the address supplied on their opt-in slip. Each pack contained a covering letter (Appendix 10) information sheet (Appendix 8), background questionnaire (Appendix 3), five standardised scales (see measures section 5.0) and stamped addressed return envelope (with researcher's address). Carers were then able to complete the research packs at a time and place of their choosing, and post their completed forms back to the researcher using the stamped addressed envelope provided.

A follow up letter (Appendix 11) to thank those carers who had returned their questionnaires and to act as a reminder to those who had not completed them was sent out to carers 2-3 weeks after the research packs.

4.2 Advertisement pathway

Two national organisations who provide services to carers, agreed to advertise the study online (Appendix 12). Carers interested in the study were then able to contact the researcher directly by email to request more information or for a research pack to be sent to them. Only 1 request was received via this path and as with the postal pathway a follow up letter was then sent 2- 3 weeks later.

4.3 Direct pathway

The third recruitment pathways, the direct method, involved CO making research packs available at carer meetings and events, the carer could then decide whether they wanted to take a pack or not. No carer names or addresses were recorded in this pathway, meaning the researcher had no direct contact with the carer at any point and no follow-up letters were sent. The COs (N=9) that used this direct pathway distributed a total of 349 research packs.

4.4 Caregivers

Participation within the study was voluntary and no financial payment or incentives were provided. All participants were free to withdraw at any stage of the study; a fact highlighted on the information sheets (Appendix 8).

5. Measures

The study utilised a background information questionnaire (Appendix 3) and 5 standardised scales, all items contained in the scales were presented in typed black ink on white paper and were in self-report

format. Of the standardised scales one was used to provide a measure of attachment style (Relationship Questionnaire) (Appendix 4), one for Coping self-efficacy (Coping Self-efficacy scale) (Appendix 13), and one for measuring functional ability of the person cared for (Bayer activities of daily living scale) (Appendix 5). The remaining 2 scales were used to measure carer distress; one focused on perceived stress (Perceived stress scale) (Appendix 14) and the other provided a measure of both anxiety and depression (The Hospital Anxiety and Depression Scale) (Appendix 15).

The questionnaires were placed together within the research pack and stapled to create a five page double-sided leaflet. Questionnaires were presented within this leaflet in the following set order:-

- Background information questionnaire (Appendix 3)
- Blank page with 'Blank page' typed on the page
- Relationship Questionnaire (RQ) (Bartholomew and Horowitz, 1991) (Appendix 4)
- Coping Self-efficacy Scale (Chesney et al., 2006) (Appendix 13)
- Perceived Stress Scale (PSS) (Cohen, et al., 1983) (Appendix 14)
- Bayer Activities of Daily Living Scale (B-ADL) (Appendix 5)
- Hospital Anxiety and Depression Scale (HADS) (Zigmond and Snaith, 1983) (Appendix 15)
- The back page had 'thank you for taking the time to complete these questionnaires' typed on it.

5.1 Background questionnaire

The background information questionnaire (Appendix 3) was created specifically for this study. It consisted of 12 items, 4 about the

participant, including age and gender, 2 about the care receiver and 6 about the relationship between the participant and care receiver.

5.2 Relationship Questionnaire

The Relationship questionnaire (RQ) (Appendix 4) was created by Bartholomew and Horowitz (1991) as a measure of adult attachment style. It has been validated and has test-retest reliability between 0.50-0.80 (Carpenter, 2001; Crowell et al., 1999; Bartholomew & Horowitz, 1991). The RQ (Bartholomew & Horowitz, 1991) consists of two parts. The first part requires participants to read four written descriptions labelled A-D. Each description represents differing degrees of feeling at ease with being emotionally close and dependent on others. Participants were asked to circle which of the statements best described them or was closest to the way they generally are within close relationships. For example description A within the RQ (Bartholomew & Horowitz, 1991) states:-

"It is easy for me to become emotionally close to others. I am comfortable depending on them and having them depend on me. I don't worry about being alone or having others not accept me"

The scores of this first part of the RQ were not used in this study; it was only included to counter the order effects of the second part of the RQ. In the second part of the RQ, the same four descriptions are present in a table. The participants rate the degree to which each of the statements (number A to D) corresponds to their general relationship style, on a scale of 1 (not at all like me) to 7 (very much like me), with a mid point of 4 (somewhat like me). The ratings for each description were recorded separately; providing four continuous

variables, namely secure (statement A), fearful (statement B), preoccupied (statement C) and dismissing (statement D).

5.2.1 Calculating dimensional scores

The scores from these four ratings were then used to derive scores for two different attachment model dimensions using the procedure outlined by Griffin and Bartholomew (1994). The first of these; the self-model dimension, corresponds to attachment anxiety. High ratings (highest possible score +12) corresponding to low attachment anxiety and low scores (lowest possible score - 12) representing high attachment anxiety (figure 2). The self-model dimension was calculated by summing both attachment styles with a positive self-model (secure and dismissing) and then subtracting the sum of the two models with negative self-models (fearful and preoccupied). Therefore the rating for each statement (A-D) was used in the following way to calculate the self-model (anxiety) dimension:

$$\text{Self-model dimension} = (A+D) - (B+C)$$

The second dimension, namely the 'other-model', represents how avoidantly attached an individual is. High (positive) ratings equate to low attachment avoidance, while low (negative) ratings correspond to high attachment avoidance (figure 2). The other-model (avoidant) dimension was calculated by adding the ratings from the two descriptions that contained positive other-models (secure and preoccupied) and then subtracting these ratings with a negative other-model (fearful and dismissing). Meaning that the dimensions were calculated by using the ratings of each of the statements in the following way:

$$\text{Other-model dimension} = (A+C)-(B+D)$$

Attachment security is therefore represented by positive scores on both other-model dimensions (figure 2).

5.3 Coping self-efficacy

The Coping Self-Efficacy (CSE) Scale is a 26-item measure of an individual's self-efficacy (confidence in their ability) to perform coping behaviours (Chesney et al., 2006) (Appendix 13). The CSE Scale has been shown to have a test-retest correlation of 0.49 to 0.68 and an internal consistency Cronbach coefficient alphas ranging from 0.80 to 0.91 (Chesney et al., 2006).

Of the 26 items included in this scale, twelve refer to problem focused coping strategies for example 'break an upsetting problem into smaller parts'. Nine refer to emotion focused coping strategies, for instance 'make unpleasant thoughts go away'. While the remaining five statements refer to social coping strategies, such as 'get emotional support from friends and family'.

Participants had to rate each of the statements on a scale, from 0 (cannot do it at all) to 11 (certain can do), with a mid point of 'moderately certain can do'. The sum of all the 26 ratings were calculated to give a total score; with a highest possible coping self-efficacy score of 286, representing positive self-efficacy. Additionally, scores were calculated for each of the sub-scales; problem, emotional and social focused. The maximum score possible for the problem focused CSE was 132; for emotional focused CSE was 99, and for social focused CSE was 55.

5.4 Perceived Stress Scale

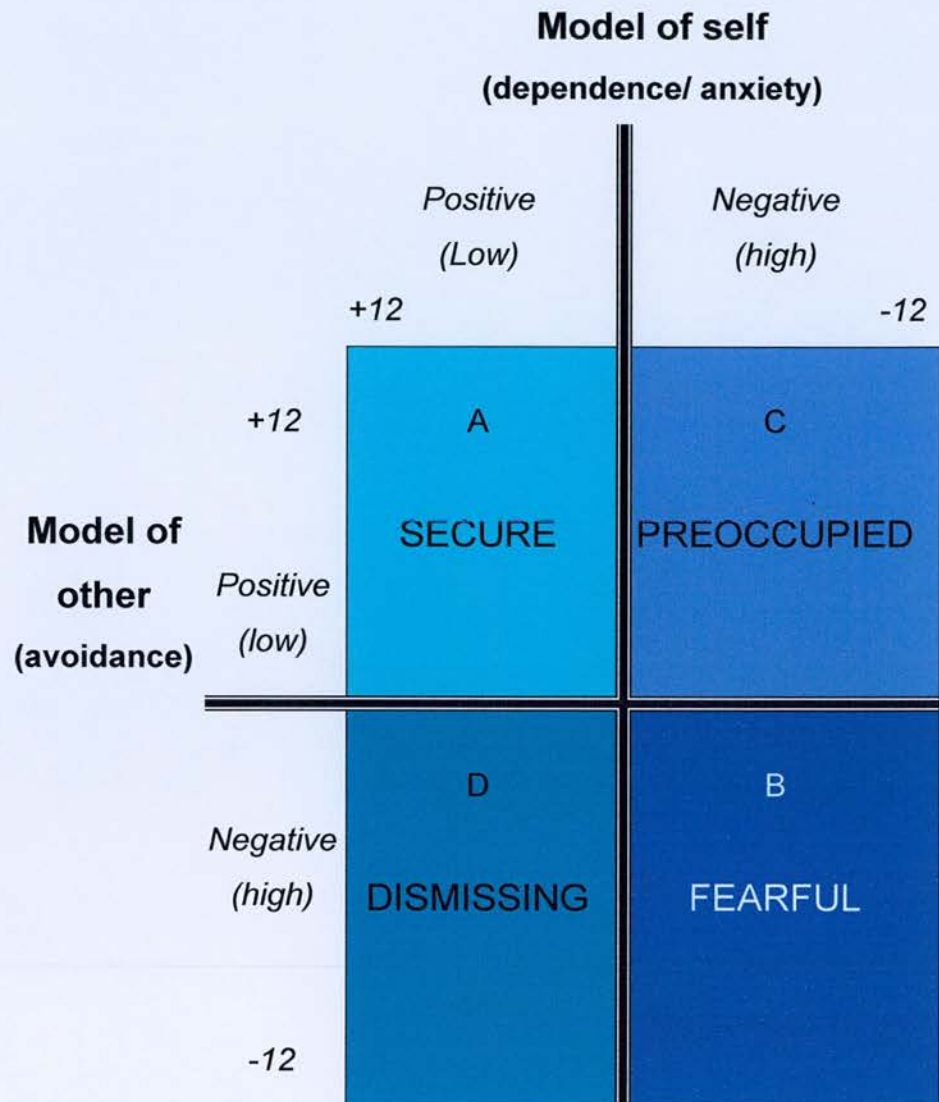
The Perceived stress scale (Cohen et al., 1983) (Appendix 14) is a 10 item self-reporting scale, which measures subjective stress. It has a test-retest reliability of 0.82-0.86 (Cohen et al., 1983; Levenstein et al., 1993). Participants were asked to rate how often within the last month they have felt or thought a certain way, for example one of the items is *'In the last month, how often have you felt you have been able to control irritations in your life?'* Participants were requested to rate each statement on a 5-point scale, ranging from 0 (never) to 4 (very often). Ratings from each item were then added together to give a total score. The highest possible score was 56; higher scores represent higher levels of perceived stress.

5.5 Bayer-Activities of Daily Living Scale

The Bayer-Activities of Daily Living scale (B-ADL) (Appendix 5) is a 25-item scale, which measures the care receiver's functional ability. The B-ADL scale (Hindmarch, 1998) has an internal consistency of 0.98 (Erzigkeit, 2001). The items on the scale each refer to a different activity, such as; *'Does the person have difficulty with personal hygiene?'* and *'Does the person have difficulty taking part in a conversation?'* Participants were asked to rate how much difficulty the person they cared for had in completing each of the 25 every day activities on a scale from 1 (never) to 10 (always). For each activity the respondent also had the option of selecting 'not applicable' or 'unknown'. The ratings were summed to give a total score, the highest possible score being 250. The higher the score, the more difficulty the care receiver had in completing the specified every day activities.

Figure 2

Self and other-model dimensions of attachment



(Replicated from Bartholomew & Horowitz, 1991, p 227)

5.6 Hospital Anxiety and Depression Scale

The Hospital Anxiety and Depression scale (HADS) (Zigmond & Snaith, 1983) (Appendix 15) is a 14-item scale, 7 items of which relate to anxiety symptoms and 7 which relate to depressive

symptoms. It has a concurrent validation of 0.68-0.93 for anxiety and 0.67-0.90 for depression (Bjelland et al., 2002). It has an internal consistency of 0.41-0.74 for anxiety items and between 0.30-0.60 for depression items (Zigmond & Snaith, 1983).

The selection of the HADS over other measures of anxiety and depression such as the Beck inventories was based on the fact that many carers are elderly and have multiple physical difficulties of their own. It was therefore considered necessary to use a measure of depression and anxiety that would not have been skewed by the caregivers own physical difficulties. As the HADS was designed for use in populations with physical health problems, it was considered appropriate for use in this study (Zigmond & Snaith, 1983).

Participants completing the HADS had to select which one of the four descriptions for each item best described how they felt in the past week. The anxiety and depression items were inter-dispersed throughout the scale. No numeral ratings were given beside any of the items in the HADS. To prevent bias by the respondent in half the items the most severe symptomology is presented first and in the others it is placed last.

Scores for the anxiety and depression subscales were calculated separately by summing the score of the seven items corresponding to that subscale. Each item has four possible scores ranging from 0 to 3, with 3 representing the highest presence of symptoms. According to Zigmond and Snaith (1983) the highest possible score for each subscale (anxiety and depression) is 21, scores of 8-10 indicate the person is mildly disturbed, while scores of 11-21 point to

definite anxiety or depression (dependent on which subscale is being analysed).

6. Analysis and Statistical Methods

Participants were enrolled in the study if they met the eligibility criteria, completed the relevant questionnaires and had signed the consent forms. The researcher allocated each set of returned questionnaires an identity code. This code was entered into a SPSS (Statistical Package for the Social Sciences) Version 11, along with corresponding questionnaire scores. Although there are a number of different methods for dealing with missing questionnaire scale items, this research used the method set out by Chesney et al. (2006). Their standard scoring rule was that participants must answer at least 80% of the applicable items within each scale; otherwise that scale was deemed unusable and recorded as missing. In cases where over 80% of the scale responses were present, an estimated score was calculated for any missing items. This was calculated by using the mean rating for the other items of the scale for that participant. The estimated score was then added to the participants' other scores creating a 'corrected' sum; for that scale. This was entered into the SPSS file, which was stored on a password protected computer. Completed questionnaires were stored in a locked filing cabinet.

Data was analysed using SPSS and the Sobel test. Correlation analysis was used to test hypotheses one to three; namely whether attachment security (positive self and other-model) was negatively associated with carer distress (anxiety, depression and perceived

stress) (Hypothesis 1), whether coping self-efficacy was positively associated with attachment security (positive self and other-model) (hypothesis 2) and whether coping self efficacy was negatively associated with carer distress (anxiety, depression and perceived stress) (Hypothesis 3). Hypothesis four, which aimed to investigate whether coping self-efficacy mediates the relationship between attachment security (positive self and other-model) and carer distress (anxiety, depression and perceived stress), was tested using multiple regression analysis and the Sobel test of mediation.

Chapter 3

Results

The following chapter considers the results gathered and is divided into 2 parts. Part 1 is subdivided into 3 sections; the first focuses on the results of the demographic and caregiver information, section 2 considers anxiety and depression, and section 3 concentrates on attachment.

This is followed by part 2 which concentrates on the statistical analysis of the data and is subdivided into 4 sections in line with this study's four hypotheses. Hypothesis 1, which proposed that attachment security (positive self and other-model) is negatively associated with carer distress, is investigated in section 1. Hypothesis 2; which stated that coping self-efficacy is positively associated with attachment security (positive self and other- model), is then considered in section 2. Hypothesis 3; which investigates whether coping self-efficacy is negatively associated with carer distress (anxiety, depression and perceived stress is assessed in section 3. Finally, section 4 considers the primary research aim; namely whether coping self-efficacy will mediate the relationship between attachment security (positive self and other-model) and carer distress (anxiety, depression and perceived stress).

Part 1

1 Demographic and caregiver information

At the opt-in stage 11 of the individuals who enquired about the study through written or telephone contact were excluded as they

did not meet the study's inclusion criteria. A total of 71 research packs were returned, 3 of which had to be excluded as over 20 percent of the questionnaires were incomplete. Of the 68 remaining participants who returned their research packs, 32% (N=22) were male and 68 % (N=46) female (Table 1). The mean age of the carers was 62 years old (SD= 15.2) (Table 1). While the mean age of those they provided care to was 77 years old (SD= 14.6) (Table 1).

Table 1
Age and gender of caregivers of individuals with dementia who participated in the study and the individuals they cared for

	N	Age (years)		Gender			
		Mean	SD	Female		Male	
				%	N	%	N
Caregiver	68	62	15.2	68	46	32	22
Care receiver	68	77	14.6	60	41	40	27

The mean results of the CGID who completed the study showed that they provided 84 hours of care per week (SD=70.8) over an average duration of 7 years (SD=8.6) (Table 2). Over half (54%, N= 37) of the caregivers lived at the same address as their care receiver (Table 2) and the majority of them were caring for a partner (49%, N=33) or parent (44%, N= 30) .

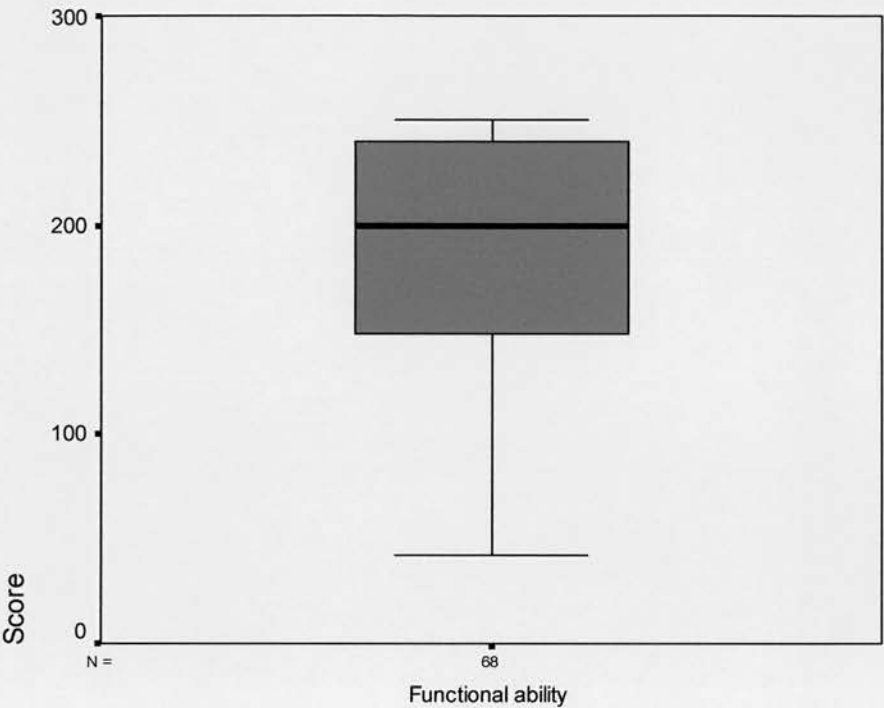
Table 2
Characteristics of the care given

N	Care given				Number of carers who live with care receiver	
	Total duration (years)		Hours per week			
	Mean	SD	Mean	SD	%	N
68	7	8.6	84	70.8	54	37

Care receivers’ function ability was measured using the B-ADL scale, the range of scores possible was 0-250. When the scores were visually inspected with the aid of a box-plot (Figure 3) it appeared that there was a large range in the functional ability of the care receivers (as reported by the caregiver). The medium functional ability was 200, indicating that the care receivers were having considerable difficulty in performing activities involved in everyday living.

Figure 3

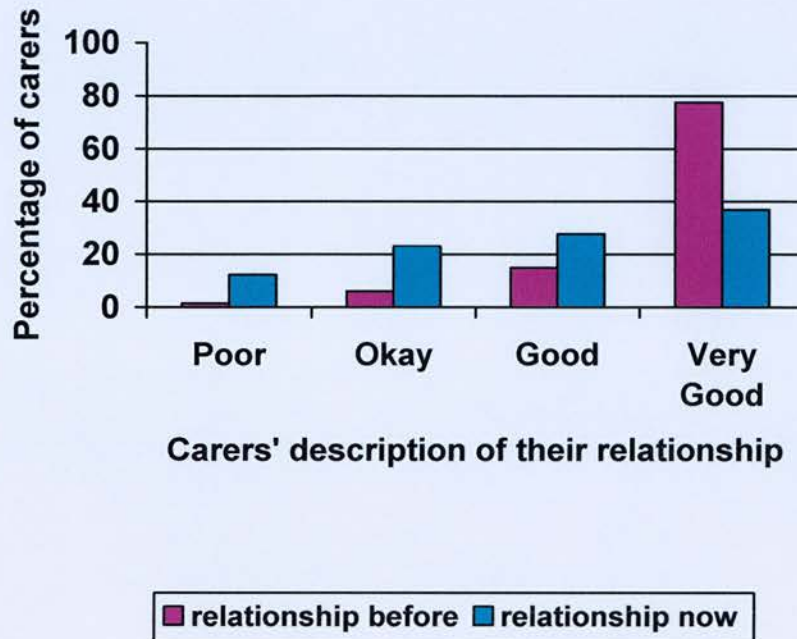
Box plot of care receiver’s functional ability as measured by the Bayer- Activities of Daily Living scale



As can be seen in Figure 4, when the carers were asked to rate their relationship with the person they provided care for on a self-report 5 point scale, the vast majority (78%, N= 52) stated that it had been very good prior to the onset of the care giving role. However, when asked to classify their current relationship with the care receiver only 37% (N=24) selected the very good category. This indicates that over half the participants reported a decline in the quality of their relationship.

Figure 4,

Bar chart comparing how caregivers rated their relationship with care receiver currently and before they became a CGID



To investigate this further a post-hoc analysis was conducted using a Wilcoxon signed rank test. This indicated that there was a significant difference ($Z=-5.001$, $p<.001$) between how caregivers rated their relationship before and after becoming a carer.

2 Anxiety and Depression

As measured by the HADS almost one fifth (19%) of the CGID could be classified as having depression (Table 3). In addition to this over twice as many of the carers (41%, N=28) met the criteria for having anxiety. A further quarter (24%, N=16) of the participants fitted into the mildly anxious category, meaning that 65% of carers displayed some degree of anxiety.

2.1 Transformation

Preliminary analyses were performed on all the variables to ensure that the assumptions of normality, linearity and homoscedasticity had not been violated. This highlighted that the distribution on the depression score was positively skewed, with most of respondents having low scores. A square root transformation was used on the measure of depression, as set out by Tabachnick and Fidell (2007); this transformed measure was then used within the hypothesis testing.

Table 3**Classification of the severity of carer's anxiety and depression.**

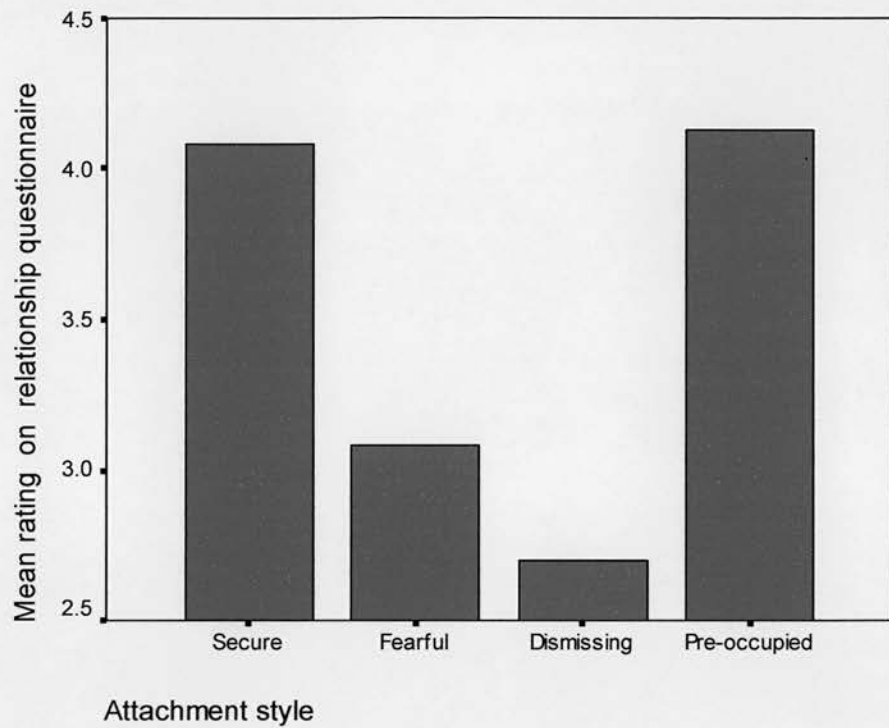
score	Classification of reported symptoms	Scale			
		Anxiety		Depression	
		N	%	N	%
0-7	Not clinically significant	24	35	44	65
8-10	Mild case	16	24	11	16
11-21	Indicative of Definite case	28	41	13	19
Total N		68	100	68	100

3. Attachment

As described in the methods chapter (Chapter 2, Section 5.2) the Relationship Questionnaire (RQ) was used to measure attachment. Within the RQ, the CGID rated themselves on 4 different attachment styles, on a scale of 1 to 7, 7 meaning it was most like them. The carer's ratings are presented in Figure 5; visual inspection of this figure indicates that carers rated themselves highest on the secure and pre-occupied styles, and lowest on dismissing.

Figure 5

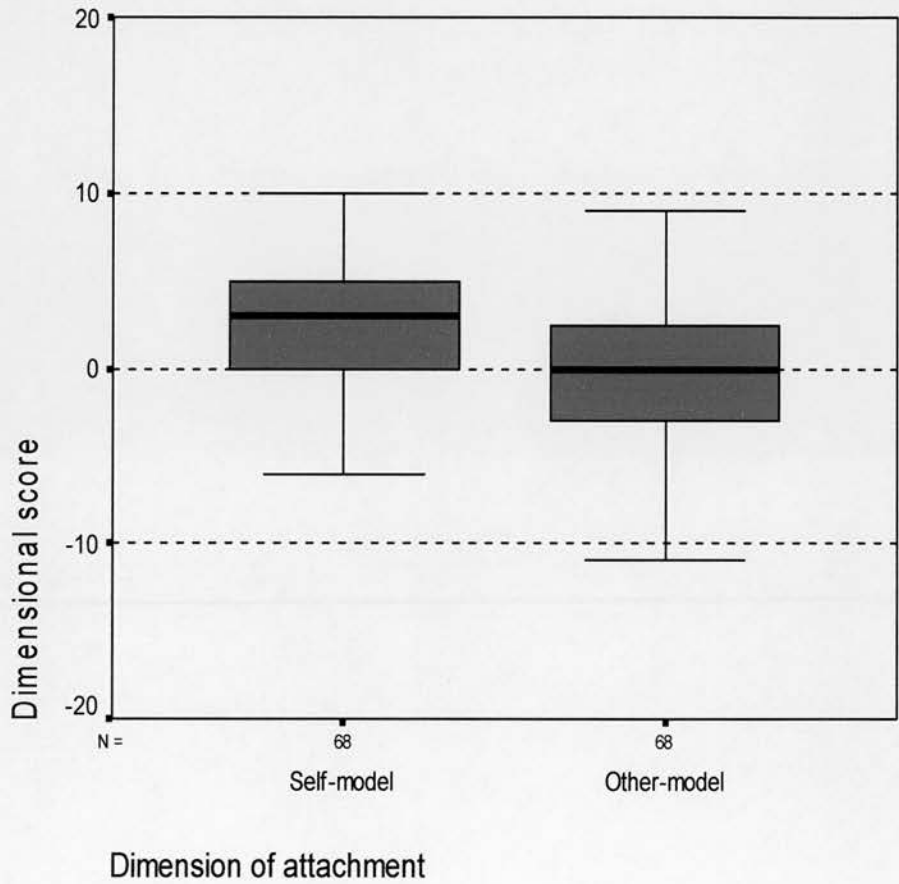
Graph showing caregivers mean rating on the four attachment styles from the Relationship Questionnaire



These ratings were used to calculate the self-model (anxiety) and other-model (avoidant) dimensions of attachment (Chapter 2, Section 5.2.1). The distribution of these dimensions was inspected using a box plot (Figure 8). Considering that the minimum possible score on each of these dimensions was -12 and the maximum +12, there appeared to be a slightly positive skew in the self-model dimension scores of attachment (Figure 6); indicating a tendency towards slightly lower attachment anxiety.

In contrast, the median value on the other-model dimension was 0 with a wide distribution of scores across both the positive and negative end of the dimensional scores. This suggests that the caregivers varied considerably in terms of how avoidantly attached they were.

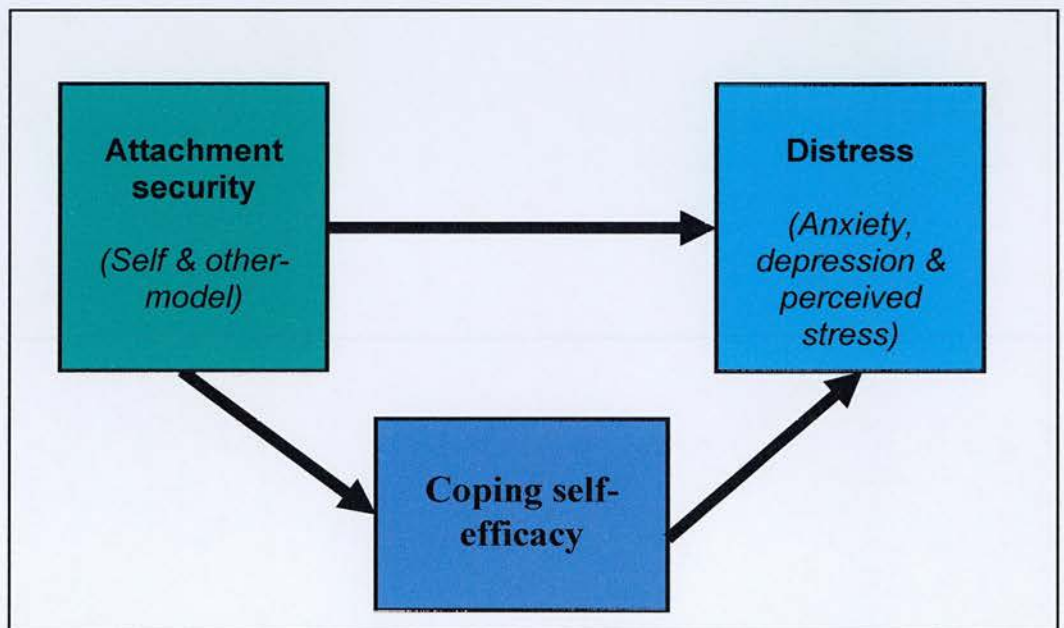
Figure 6
Box plot of carers' other and self-dimensions of attachment scores.



Part 2

As previously discussed, this study has 3 secondary hypotheses; which are central to the principle research objective. The primary objective was to investigate whether coping self-efficacy mediates the relationship between attachment security and carer distress (perceived stress, anxiety and depression) in carers of individuals with dementia (Figure 7).

Figure 7,
Diagrammatic representation of principle research hypothesis.



In order for coping self-efficacy to be confirmed as a mediator, four criteria had to be met (Tabachnick & Fidell, 2007). Firstly there needed to be a significant relationship between independent

variable (IV) (attachment) and dependent variable (DV) (distress). Secondly, there needed to be a significant relationship between the IV (attachment) and the mediator (CSE). Thirdly the mediator (CSE) had to have a unique effect on the DV (distress) after the IV (attachment) was controlled for. The final criterion was that the effect of IV (attachment) on the DV (distress) should decrease once the mediator (CSE) was entered into the model.

Therefore, in order to explore this primary aim, the relationships between the subcomponents of this proposed model were scrutinised in the sequence set out by the studies' secondary aims. These secondary aims included investigating whether:

1. Attachment security (positive self and other-model) is negatively associated with carer distress (anxiety, depression and perceived stress) (Figure 8a)
2. Coping self-efficacy is positively associated with attachment security (positive self and other-model) (Figure 8b)
3. Coping self-efficacy is negatively associated with carer distress (anxiety, depression and perceived stress) (Figure 8c)

1. Hypothesis 1; attachment and distress

The first aim of this study was to investigate if attachment security was negatively associated with carer distress (anxiety, depression and perceived stress) (Figure 8a). As secure attachment corresponds to high ratings on both self and other-model dimensions (Figure 9), in order for this hypothesis to be supported, each of the measures of distress would have to be

negatively correlated with attachment security (high self and other-model attachment dimensions) (Table 5).

Additionally the literature (Chapter 1, Section 2.1) has indicated that the functional ability of the care receiver may have an important impact on carer distress, this will be controlled for. The following section will look at each of the three measures of distress in turn.

1.1 Anxiety

1.1.1 Self-model

The relationship between anxiety levels (measured by the HADS) and self-model of attachment was explored using a partial correlation; the care receivers functional ability (as measured by B-ADL) was controlled. This revealed a weak negative correlation ($r = -.293$ $DF=65$, $p < .016$) between self-model dimension of attachment and anxiety (Table 4). Therefore, within the sample those with a more positive self-model of attachment (less anxious attachment) appeared to have lower levels of anxiety.

An inspection of the zero order correlation ($r = -.312$) implies that controlling for functional ability of the care receiver had a very minor effect on the strength of the association between these two variables.

1.1.2 Other-model

However, when the relationship between other-model of attachment and anxiety was scrutinized using a partial correlation the relationship was not found to be statically significant ($r = -.198$, $DF=65$, $p < .109$).

Figure 8

Diagrammatic representation of research hypotheses

Figure 8a, Hypothesis 1; attachment security is negatively associated with carer distress

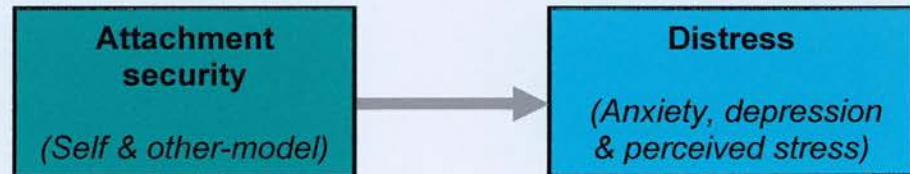


Figure 8b, Hypothesis 2; coping self-efficacy is positively associated with attachment security.

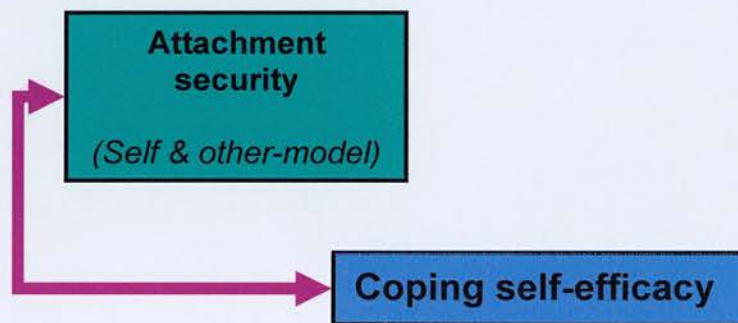




Figure 8c, Hypothesis 3; coping self-efficacy is negatively associated with carer distress



Figure 9

Diagram illustrating differences between secure and insecure attachment

<p>Positive self-model (<i>Low on anxious attachment</i>)</p> <p>Positive other-model (<i>Low on avoidant attachment</i>)</p>	<p>Negative self-model (High on anxious attachment)</p> <p>Positive other-model (Low on avoidant attachment)</p>	<p>Key</p> <p> Secure attachment</p> <p> Insecure attachment</p>
<p>Positive self-model (Low on anxious attachment)</p> <p>Negative other-model (High on avoidant attachment)</p>	<p>Negative self-model (High on anxious attachment)</p> <p>Negative other-model (High on avoidant attachment)</p>	

1.1.3 Summary

As anxiety was negatively correlated with the self-model of attachment but not the other-model of attachment, the hypothesis that secure attachment was negatively associated with carer anxiety was not fully supported.

1.2 Depression

1.2.1 Self and other-model

Similarly, the relationship between self-model dimension of attachment and depression was explored with the aid of partial correlation. When functional ability was controlled, the other-model of attachment and depression were not found to be correlated ($r=-.178$, $DF=65$, $p<.151$). Similarly there was no evidence of any correlation between other-model of attachment and depression ($r=-.213$, $DF=65$, $p<.083$).

1.2.2 Summary

The hypothesis that depression was negatively correlated with attachment security was not supported.

1.3 Perceived Stress

1.3.1 Other-model

Similarly, inspection of the connection between other-model of attachment and perceived stress using a partial correlation (functional ability was controlled), indicated a weak negative correlation ($r=-.293$, $DF=65$, $p<.016$). Meaning that higher ratings on the other-model (lower levels of avoidance) was correlated with lower levels of perceived stress.

Examination of the zero order correlation ($r=-.284$) indicated that controlling for functional ability did not have a major impact on the relationship between attachment avoidance and perceived stress.

1.3.2 Summary

The finding that perceived stress negatively correlated with both self and other-model of attachment was in line with the hypothesis. This means that secure attachment is associated with lower levels of perceived stress.

Table 4

Partial correlations between attachment dimensions and distress in caregivers, while controlling for care receivers' functional ability.

Measure of distress	Correlation type	Attachment dimension					
		Self-model			Other-model		
		<i>r</i>	<i>DF</i>	<i>Sig.</i>	<i>r</i>	<i>DF</i>	<i>Sig.</i>
Anxiety	<i>Partial</i>	-.293	65	.016	-.198	65	.109
	<i>Zero-order</i>	-.312	66	.010	-.180	66	.143
Depression	<i>Partial</i>	-.178	65	.151	-.213	65	.083
	<i>Zero-order</i>	-.196	66	.109	-.204	66	.096
Perceived stress	<i>Partial</i>	-.298	65	.014	-.293	65	.016
	<i>Zero-order</i>	-.313	66	.009	-.284	66	.019

1.4 Summary

It had been predicted that attachment security (high self and other-models) would be negatively correlated to distress. This was only partially supported. Though attachment security was negatively correlated to perceived stress, only the self-model of attachment was negatively associated to anxiety. No correlation was found between the other-model of attachment and anxiety or linking either of the attachment models with depression. Furthermore the functional ability of the caregiver was only found to have a minor impact on the relationship between attachment and distress.

2. Hypothesis 2; Coping self-efficacy and attachment

The second objective of this research was to investigate whether coping self-efficacy (CSE) (as measured by the coping self-efficacy scale) was positively associated with attachment security. In order for this hypothesis to be supported, CSE would need to be positively correlated with both the self and other-model dimensions of attachment. We will consider the relationship between CSE and both of these dimensions in turn (Table 5).

2.1 Self- model (attachment anxiety)

A Pearson product-moment correlation coefficient was used to test whether respondents with high levels of CSE had a more positive self-model of attachment (less anxious attachment). The result of

this showed that there was a moderate positive correlation between the two variables ($r=.439$, $N=68$, $p<.001$), with more positive self-models (lower attachment anxiety) associated with higher levels of CSE (table 5).

Table 5
Pearson correlations of attachment dimension and coping self-efficacy

	Attachment					
	Self-model dimension of attachment			Other-model dimension of attachment		
	<i>Pearson Correlation</i>			<i>Pearson Correlation</i>		
	<i>r</i>	<i>Sign.</i>	<i>N</i>	<i>r</i>	<i>Sign.</i>	<i>N</i>
Coping Self-efficacy	.439	.001	68	.295	.015	68

2.2 Other- model (attachment avoidance)

When the relationship between CSE and other-model dimension of attachment was initially explored using a Pearson product-moment correlation coefficient, there was a weak positive correlation between the two variables ($r=.295$, $N=68$, $p<.015$), with more positive other-models (corresponds to low attachment avoidance) being associated with higher levels of CSE.

2.3 Summary

The hypothesis that CSE is positively associated with attachment security (positive self and other-model) was supported by the data collected within this study. As CSE scores were positively associated with positive self and other-model dimensions.

3. Hypothesis 3; coping self-efficacy and distress

The third research objective was to investigate whether coping self-efficacy was negatively associated with carer distress. In order for this hypothesis to be supported each of the three measures of carer distress used by this study; namely anxiety, depression and perceived stress would have to be shown to be negatively correlated to CSE. The following section will consider the relationship between coping self-efficacy and each of these measures of distress (Table 6). The collective findings will be summarised in relation to hypothesis 2 at the end of this section.

3.1 Anxiety

The relationship between CSE and anxiety was explored using a Pearson product-moment correlation coefficient, which revealed a large negative correlation between the two variables ($r=.629$, $N=68$, $p<.001$), with higher levels of anxiety symptomatology being associated with lower levels of CSE.

3.2 Depression

Similarly, using a Pearson product-moment correlation coefficient, a large negative correlation was found to exist between the two variables ($r=-.536$, $N=68$, $p<.001$), with higher levels of depressive symptomatology being associated with lower levels of CSE.

Table 6

Pearson correlations of coping self-efficacy and distress

Measure of Distress	Coping self-efficacy		
	<i>Pearson Correlation</i>		
	<i>r</i>	<i>Sign.</i>	<i>N</i>
Anxiety	-.629	.001	68
Depression	-.536	.001	68
Perceived stress	-.537	.001	68

3.3 Perceived stress

The relationship between CSE and perceived stress in carers was inspected using a Pearson product-moment correlation coefficient, this confirm that there was a large negative correlation between these variables ($r=-.537$, $N=68$, $p<.001$).

3.4 Summary

To summarise, the hypothesis that CSE is negatively associated with carer distress was fully supported. Higher levels of CSE were associated with lower levels of anxiety, depression and stress.

4. Hypothesis 4; the principle research objective

As described at the beginning of this chapter this study aimed to look at whether CSE mediates the relationship between attachment and distress. Following the recommendations of Baron and Kenny (1986) the first step in testing this mediation relationship was to establish whether the attachment correlated with distress (anxiety, depression and perceived stress). As presented in Chapter 3, Part 2, section 1, only one of the measures of distress; namely depression, was not significantly correlated with attachment. This resulted in hypothesis that CSE mediates the relationship between attachment and depression being rejected. Similarly anxiety was not found to be correlated with the other-model of attachment (Figure 12), and was therefore excluded from further investigation with this attachment dimension.

As represented in Figure 10, anxiety was found to be correlated with the self-model of attachment. While, perceived stress was associated with both attachment dimensions (self and other) (Chapter 3, Part 2, Section 1)

The results from hypothesis 2 and 3 (Chapter 3, Part 2, Sections 2 & 3) were then used to confirm that there was a significant correlation between both the IV and the mediator; and the mediator and the DV. This indicated that it was appropriate to investigate three mediation models (Figure 11). The models considered were that CSE mediated the relationship between:

1. Self-model dimension of attachment and anxiety (Figure 11a).
2. Self-model dimension of attachment and perceived stress (Figure 11b).
3. Other-model dimension of attachment and perceived stress (Figure 11c).

In order to test whether CSE carries the influence from attachment to the relevant measure of distress for each of the 3 models (Figure 11), two regressions analysis were conducted within SPSS for each of the models. The first regression used the attachment dimension (self or other) as the IV and CSE as DV. The second regression analysis then employed the attachment dimension and CSE as the IV, and the measure of distress (anxiety or perceived stress) as the DV. The raw regression coefficients from both regressions and the standard error were then inputted into an online Sobel test (Preacher & Leonarddelli, 2008).

Figure 10

Summary diagram of correlations found between attachment, coping self-efficacy and distress variables.

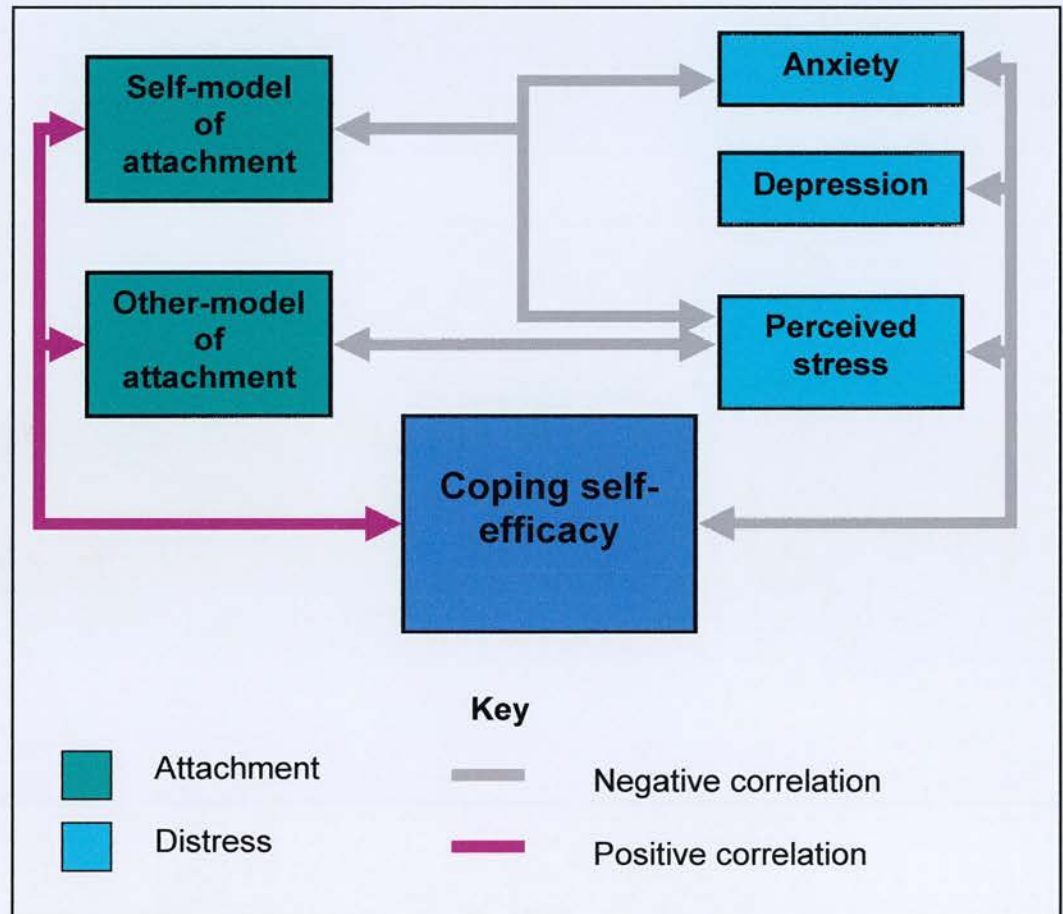


Figure 11

Proposed models of mediation

Figure 11a, Model 1: CSE mediates the relationship between self-model of attachment and anxiety

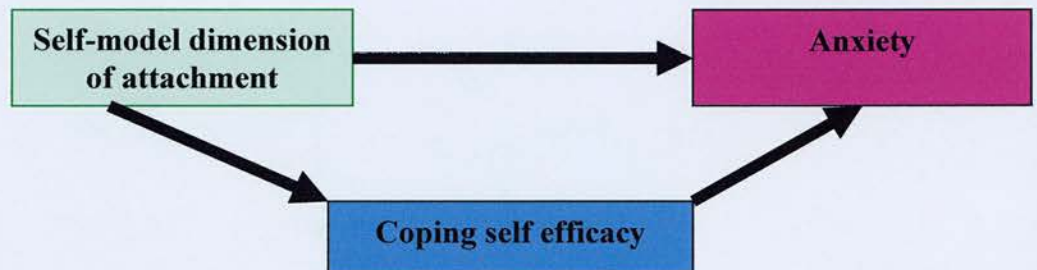


Figure 11b, Model 2: CSE mediates the relationship between self-model of attachment and perceived stress

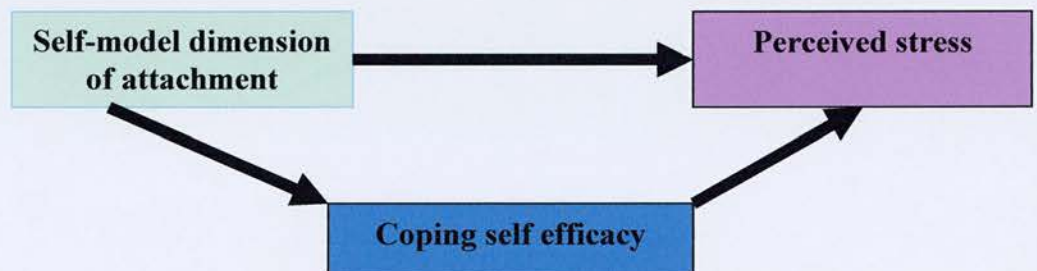
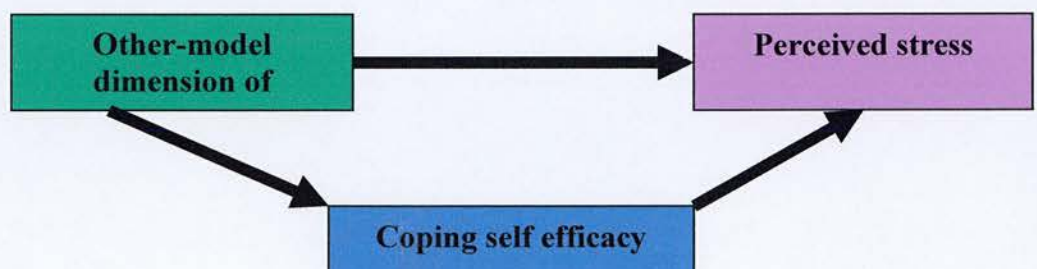


Figure 11c, Model 3: CSE mediates the relationship between other-model of attachment and perceived stress



4.1 Model 1; self-model of attachment and anxiety

The regression coefficients (Table 7) for the first regression ($B=6.588$, $SE=1.658$, $p<.001$) and second regression ($B=-.054$, $SE=.010$, $p<.001$) were then inputted into a Sobel test. The test result for the Sobel test was significant (Sobel= -3.200 $p<.001$), exceeding the critical value. This indicates that the association between self-model of attachment and anxiety was significantly reduced by the inclusion of the mediator (CSE) in the model. This, therefore, supports model 1 (Figure 11a), that CSE mediates the relationship between self-model of attachment and anxiety.

4.2 Model 2; self-model of attachment and perceived stress

Similarly when the mediation effect of CSE on self-model of attachment and perceived stress was tested using the results from both regression1 ($B=6.588$, $SE=1.658$, $p<.001$) and 2 ($B=-.205$, $SE=.250$, $p<.416$). The Sobel test was not significant (Sobel= $-.803$, $p<.422$) (Table 7). Meaning that the results failed to support model 2 (Figure 11b), that CSE has a mediating effect on the relationship between the self-model of attachment and perceived stress.

4.3 Model 3; other-model of attachment and Perceived stress

Regression analysis was conducted within SPSS using the other-model dimension of attachment as IV and CSE as DV ($B=3.747$, $SE=1.497$, $p<.015$). Then a second regression analysis was conducted using perceived stress as the dependent variable; CSE and other-model of attachment were inputted as predictors ($B=-.071$, $SE=.016$, $p<.001$) for perceived stress (Table 7).

The raw regression coefficients were then inputted into a Sobel test. The test result for the Sobel test was also not significant (Sobel=-.373, $p<.709$) (Table 7). This indicated that the association between other-model of attachment and perceived stress was not significantly reduced by the inclusion of the mediator (CSE) in the model. Therefore, model 3 (refer to Figure 11c) was rejected.

4.4 Summary

Of the three models (Figure 13) of mediation tested, only one was statistically significant. This model proposed that CSE mediated the relationship between self-model of attachment (the anxious attachment dimension) and carers' levels of anxiety (Figure 11a).

Table 7

Mediation (regression and Sobel test) results for each of the three models.

Dependent variable	Variables in the equation	(unstandardised) Regression coefficient		Sobel Test
		B	SE	
Mediation model 1 (CSE as a mediator of the relationship between self-model of attachment and anxiety)				
1. CSE	Self-model	6.588	1.658	-3.200
2. Anxiety	Self-model & CSE	-.054	.010	P< .001
Mediation model 2 (CSE as a mediator of the relationship between self-model of attachment and perceived stress)				
1. CSE	Self-model	6.588	1.658	-.803
2. Perceived stress	Self-model & CSE	-.205	.250	p<.422
Mediation model 3 (CSE as a mediator of the relationship between other-model of attachment and perceived stress)				
1. CSE	Other-model	3.747	1.657	-.349
2. Perceived stress	Other-model & CSE	-.071	.016	P<.727

Chapter 4

Discussion

1. Findings

In this study it was hypothesised that attachment security (positive self and other-model) would be negatively correlated to carer distress (anxiety, depression and perceived stress). However, the results of this research revealed that the relationship between attachment security and distress was more complex than hypothesised, meaning that the hypothesis was only partially supported.

As predicted attachment security (positive self and other-model) was negatively correlated to perceived stress. Having low levels of anxious (positive self-model) and avoidant (positive other-model) attachment was associated with lower levels of perceived stress. Similarly, low levels of anxious attachment (positive self model) were negatively correlated to carer anxiety. Furthermore, the functional ability of the care recipient only had a minor impact on the relationship between the aforementioned measures of attachment and distress.

In contrast no significant correlation was found between avoidant attachment (other-model) and carer anxiety or depression. Similarly, anxious attachment (self-model) was not found to correlate with depression.

It had been hypothesised that CSE would be positively associated with attachment security (positive self and other-model), this was supported by the data; CSE scores were positively associated with positive self and other-model dimensions. Meaning high CSE correlated to low attachment anxiety (positive self-model) and avoidance (positive other-model). Interestingly, the correlation between CSE and the self-model (anxious attachment) was stronger than between CSE and the other-model (avoidant attachment).

Likewise, the third hypothesis; namely that CSE would be negatively associated with carer distress (anxiety, depression and perceived stress), was fully supported. Strong negative correlations were found to exist between CSE and each of the three measures of distress; anxiety, depression and stress.

The final hypothesis considered whether CSE mediated the relationship between attachment security (positive self and other-model) and carer distress (anxiety, depression and perceived stress). This hypothesis was only partially supported. In line with the recommendations made by Baron and Kenny (1986) regarding testing mediation, it was only deemed appropriate to test three models of mediation. Namely, that CSE mediated the relationship between:

1. self -model of attachment and anxiety
2. self-model and perceived stress
3. other-model and perceived stress

Of these three potential models CSE was only found to mediate the relationship between self-model of attachment and anxiety.

This finding is important as it indicates that the relationship between self-model of attachment (anxious attachment) and anxiety is not simply of a direct linear nature, but that CSE plays an important mediating role.

The remainder of this chapter will consider each of the three measures of carer distress; anxiety, perceived stress and depression in turn; discussing them in relation to both the findings of this study and the wider body of literature. The strengths and limitations of the study have been examined, conclusions drawn and recommendations for future research made.

2. Anxiety

Forty percent of the carers who participated in this study reported classifiable levels of anxiety (according to HADS, Zigmond & Snaith, 1983); this clearly demonstrates how prevalent anxiety is within the CGID population. CSE has been shown to mediate the relationship between anxious attachment (low self-model) and carer anxiety. Not only does this finding increase our understanding of the crucial factors involved in carer anxiety but it enables us to gauge how these factors are related to each other.

These anxiety related findings were supported by the limited existing literature in this field (Cooper, Owens et al., 2008) as well as by the wider literature surrounding attachment (Fraley & Shaver, 2000; Hardy, 2007) and CSE (Collins & Read, 1990;

Bowlby, 1969; Kemp & Neimeyer, 1999, Mikulincer et al., 1993). These results support the theory that carers with anxious attachment (negative self-model dimension) developed a negative internal working model within childhood and that these models are then triggered by the stress of caregiving (Gillath et al., 2005; Fraley & Shaver, 2000; Hardy, 2007; Mikulincer et al., 2003)

Although caregiving can be considered as a stressful experience for most individuals, it can be seen to be particularly stressful to those with anxious attachment styles. In comparison to other attachment styles, individuals with an anxious attachment style are believed to be more empathic to the distress of the care receiver, which in turn increases their personal anxiety levels (Gillath et al., 2005; Mikulincer et al., 2003). This places considerable pressure on these individuals, as they have finite mental and emotional resources and are forced to try and balance the competing demands of using these resources to contain their own anxiety, along with providing effective care to the care recipient (Gillath et al., 2005; Mikulincer et al., 2003).

In individuals with an insecure attachment style, the activation of their negative internal working model during stressful times heightens their feelings of low self-esteem, SE and inadequacy (Holmes, 2005; Mikulincer et al., 1993, 2004; Wei et al., 2003). People with low SE view difficult tasks as a personal threat as opposed to a challenge (Pajares, 1997). These negative SE beliefs are reflected in the individual's pessimistic CSE beliefs, which subsequently cause the individual to dwell on the

inadequacies in their coping abilities, and feel anxious (Bandura, 1989; Kemp & Neimeyer, 1999). Low CSE also results in the individual investing less time and energy into attempts to cope, both with the original stressor and the anxiety (Bandura, 1989; Benight et al., 1999; Muris, 2002; Perraud, 2000; Schwarzer, 1992;

As CSE is deemed to be a prerequisite to using coping strategies, findings in this study complement and expand upon the results by Cooper, Owens et al. (2008) that state that attachment is associated with the coping strategy used by CGID. By combining their findings with those from this study, it appears that anxious attachment causes the formation of a negative internal working model. The CGID develops an internal source of insecurity regarding their coping abilities, which results in a lower CSE. Their low CSE beliefs then results in them selecting dysfunctional coping strategies which fail to alleviate anxiety. Therefore both CSE and actual coping strategies could be considered as mediators of the relationship between attachment and anxiety in CGID.

3. Perceived stress and depression

As discussed there was a strong negative correlation between anxiety and CSE. Similarly, perceived stress and depression were also found to have a strong negative correlation to CSE. However, the relationship between these two measures of distress and attachment was different to that of anxiety and attachment. Low perceived stress was not only correlated with

the self-model of attachment but also with the other-model. In contrast depression was not found to be correlated with either model of attachment. We will consider stress and depression, and their relationships to both CSE and attachment in the following sections.

3.1. Perceived stress, depression and CSE,

As predicted from social cognitive theory, higher levels of CSE were correlated with lower levels of stress and depression (Bandura, 1989; Ehrenberg & Cox, 1991; Kanfer & Zeiss, 1983; Muris, 2002). The connection between CSE with both stress and depression is similar to that with anxiety (Bandura, 1989; Schwarzer, 1992). Low CSE results in individuals becoming stressed and depressed at their perceived inability to cope with the situation which they are tackling. In addition, low CSE reduces the individual's ability to effectively utilise coping behaviours to reduce their stress and depression levels.

It must be noted that these relationships were investigated using correlations, therefore we can only infer from the literature which factor is influencing the other. It was hypothesised that low CSE causes depression, however it could be argued that influence may actually be in the other direction; depression may cause CSE beliefs to decrease. Depression is linked to cognitive and emotional changes including lowered concentration, motivation, feelings of hopeless and low self-esteem, which may result in the individual feeling they are unable to master tasks (Ehrenberg & Cox, 1991; Scott, 1998). As Bandura proposed, mastery experiences and physiological states are two methods

in which SE beliefs can be lowered or heightened (Bandura, 1997; Pajares, 1997; Schwarzer & Schmitz, 2004).

Lazarus and Folkman (1984) proposed a mastery experience can also result from using coping strategies effectively, and that this subsequently results in positive cognitive reappraisal which increases SE beliefs. For some individuals the caregiving role may provide this mastery experience, providing them with the opportunity for psychological growth (Townsend et al., 1989). As they learn to cope effectively with caregiving demands their CSE beliefs are heightened (Townsend et al., 1989).

It would seem probable that the relationship between CSE and both stress and depression may be bio-directional. Stress or depression reduces CSE beliefs, which then subsequently increase stress and depression. Therefore, CSE can be seen as the cause or the consequence of stress and depression (Pruchno & Resch 1989).

Although correlations were also used to consider the relationship between stress and attachment, it seems less likely that there would be a bio-direction relationship. As the literature suggests attachment styles are very resistant to change (Cooper, Owens et al., 2008; Fraley & Shaver, 2000; Holmes, 2005).

3.2. Perceived stress and Attachment

The relationship between perceived stress and attachment, fitted with this study's hypothesis. The findings therefore fit with the existing literature which postulate that secure attachment

acts as a personal resource, leading to the development of positive internal working models (Kemp & Neimeyer, 1999; Mikulincer et al., 1993; Shaver & Hazan, 1994). These models are activated during times of stress and lead to the creation of optimistic expectations, strong sense of control, SE and self confidence that help the individual deal with the stressor (Collins & Read, 1990; Bowlby, 1969; Kemp & Neimeyer, 1999, Mikulincer et al., 1993).

In contrast those with an insecure attachment style are proposed to have a more negative working model and will consequently have difficulty with stress regulation (Bowlby, 1969; Kemp & Neimeyer, 1999). Stress can then result from the CGID perceiving that the demands being placed on them outweigh the resources they have available to them (Bandura, 1969; Lazarus, 1966).

3.3. Depression and attachment

Although a fifth of the carers were found to have significant levels of depression (according to the HADS, Zigmond & Snaith, 1983), this was not found to be significantly correlated with attachment. It had been predicted that depression would be negatively correlated with secure attachment (positive self and other-model of attachment). This finding may be explained by the methodology issues or by other factors.

3.3.1. *Methodological issues*

Carers who have high levels of avoidant attachment (negative other-model) may divert negative emotions out of their awareness and therefore be more prone to higher levels of

somatization and hostility as opposed to depression (Mikulincer et al., 1993; Kobak & Sceery, 1988; Mikulincer et al., 1990; Shedler et al., 1993). Therefore measuring depression may not be the most appropriate way of gauging their distress.

Alternatively it is possible that our sample was not fully representative of the carer population and that the lack of a significant relationship between attachment and depression is an artefact of this. To illustrate carers gave themselves a low rating on both the fearful and dismissing scales of our attachment questionnaire. Both fearful and dismissing styles are characterised by negative other-model dimensions (avoidance). It could be argued that there were too few carers with a negative other-model of attachment for any significant relationship to be detected. The study may have had inadequate power to detect relationships between depression and the other-model dimension.

This leads us to question why fewer of the carers had negative other-models. There are two main explanations for this, firstly it may be attributed to a recruitment bias for example, avoidantly attached carers may be less likely to seek the help of carer and dementia organisations, feeling they can cope with problems alone.

Alternatively, it may be that the pattern of attachment seen within the participants was typical of CGID. Those with negative other-models (high avoidance) may have been less empathic to care receivers (Gillath et al., 2005; Mikulincer et al., 2003) and therefore be less likely to feel the need to become a CGID. However, previous research into carers indicates that despite

attachment based differences in the tendency to care, carer populations are a heterogeneous group consisting of individuals with a range of attachment styles (Gillath et al., 2005; Loboprabhu, 2006; Mikulincer et al., 2003).

Another possible explanation is that the pattern of attachment within the CGID is attributed to the age of the carers within the study. Their mean age was 61 years old which is within 'working age', but the standard deviation was 15 years; classing many of the carers as older adults (> 65 years). It has been argued that attachment patterns in older adults may not conform to the pattern of distribution found within younger populations (Browne & Shlosberg, 2006). For example a higher percentage of older adults are found to have avoidant attachment, while fewer have a preoccupied attachment (Magai & Cohen, 1998). This corresponds to the pattern found within our study indicating that age may have been an important factor and that the sample used by this research was representative.

It has been proposed that the increased frequency of life events such as divorce and widowhood within older adults results in a shift in attachment style (Browne & Shlosberg, 2006). However, this theory could be disputed on the grounds that attachment styles tend to be resistant to change (Cooper, Owens et al., 2008).

An alternative explanation is that cohorts born earlier in this century may have experienced more dismissing parenting styles, resulting in a higher percentage of older adults developing avoidant attachment styles (Browne & Shlosberg,

2006). This explanation seems more plausible as it fits with the attachment theory, that parenting affects attachment style. Nevertheless, it is probable that the pattern of attachment seen in this age group is an artefact of a combination of both the aforementioned factors.

3.3.2. *Other factors*

It may be that other factors are more important in the aetiology of depression; this study has already highlighted that CSE is one such factor. The results also showed that there had been a significant decline in how the CGID in this study rated the quality of their relationship to the care receiver over the caring period; the majority of CGID were living with a partner or parent with whom they felt their relationship had declined. Coupled with the fact that on average they were providing 12 hours of care a day, it could be assumed they have little time to create and maintain relationships with others, leaving them at risk of experiencing loneliness. Wei et al. (2005), in their study on attachment and depression in college students, found that depression significantly correlated with loneliness. Loneliness may, therefore potentially have been an important factor in the levels of depression experienced by the caregivers, and should be explored further.

Nevertheless, loneliness may not be the most important factor influencing depression within the CGID. Studies indicate that between 47 to 68 percent of carers report experiencing anticipatory grief reactions (Adams & Sanders, 2004; Kübler-Ross & Kessler, 2005; Verhaeghe et al., 2005). The following is a description of such a reaction experienced by a carer: "The

grief didn't begin when my husband died. It began the day my worse suspicions were confirmed that Kevin had Alzheimer's. I was losing my husband piece by piece. I was losing the personality of the person I knew and loved." (Kübler-Ross & Kessler, 2005, p191).

Being a CGID includes multiple current and anticipated losses, prior to and including the actual death of the care receiver (Adams & Sanders 2004). Kübler-Ross and Kessler (2005) refer to anticipatory grief as the "beginning of the end" (p.1). It is often considered to be a 'hidden grief' that caregivers find hard to talk about due to stigmas associated with dementia and difficulties in recognizing the feelings of grief (Adams & Sanders, 2004; Walker & Pomeroy, 1996). They may therefore 'put on a brave face' and appear to be coping.

Kübler-Ross and Kessler (2005) propose that depression plays an important part in the grief processes, forming one of the five stages of grief (denial, anger, bargaining, depression and finally acceptance). They state that within a grief context depression may not be a sign of mental illness, but a very appropriate response to a great loss (Kübler-Ross & Kessler, 2005). They explain that depression can act as a protective mechanism, slowing the individuals down and helping them to adapt to something they feel they cannot handle, and it is a necessary step towards healing (Kübler-Ross & Kessler, 2005).

Verhaeghe et al. (2005) investigated the experience of loss, grief and depression in CGID; they divided the progression of dementia into 3 stages. Ninety-nine caregivers were involved in

this postal survey which included open-ended descriptive questions and scale measures (Adams & Sanders, 2004). Moderate levels of grief and depression were found across the whole sample, but those providing care for someone at the 'end stage' of dementia had significantly more grief and depression (Adams & Sanders, 2004). The authors concluded that caregivers experienced different emotional challenges as dementia progressed (Adams & Sanders, 2004).

However it should be noted that though this study considered stages of dementia decline, it used a cross-sectional design therefore the results only infer that carers experience different emotions for different stages of the disease. A further difficulty of this research is that it gauged the stage of the dementia by asking caregivers to estimate the care recipient's condition. This leads us to question the reliability and validity of this measure, and subsequent results of the study.

Conversely, the use of subjective rating scale is relatively common within caregiver research (Adams & Sanders, 2004). It may also be argued that such measures are more informative than the use of an objective measure, as it may be the carers' perception of their ability and stage that affect their level of grief and depression. In addition, although the measure of the stage of dementia was not standardised, the results of the study are supported by the existing literature (Kübler-Ross & Kessler, 2005; Verhaeghe et al., 2005).

As our current study did not directly measure what stage of dementia the care recipient was in it is difficult to gauge how

many of the CGID in our current study were caring for someone with end stage dementia. This does, however, indicate in terms of depression that perhaps our research has been asking the wrong questions. The issue may not be what causes depression in CGID or how we can intervene; instead perhaps our focus should have been on how to facilitate them to develop a sense of acceptance (Adams & Sanders, 2004).

Acceptance forms the final stage in five stages of grief (Kübler-Ross & Kessler, 2005), and has been found to be related to lower levels of depression (Pruchno & Resch, 1989). Acceptance is an emotional based coping strategy and as such it may be that CSE plays a potentially important role in facilitating carers to use acceptance.

4. Strengths

This study has illustrated the importance of CSE in caregiver distress, and is hoped that it will initiate increased interest in this under researched area. It is also anticipated that these findings could be utilised in further research, and that the methodological strengths and weakness of this current study could aid in informing its design.

In terms of strengths, it initially appeared that the response rate was going to be very low, which would have compromised the statistical power of the results collected; however, this fact transformed into an unexpected advantage. The low response rate meant that recruitment was extended over a larger

geographical area, which included both rural and urban regions, providing a more representative sample of the wider population of CGID.

The use of a 'postal recruitment' method can also be considered to be a strength. The advantage of using this type of method over a 'face to face' approach was that the carers had no physical contact with the researcher, thus allowing them greater anonymity; resulting in the data collected possibly being a more reliable measure of these variables.

This study did not use any carer specific scales such as caregiver burden, which is debatably a further strength. It has been proposed that the use of care-specific measures prevent the accurate comparison of caregiver with non-caregiver populations (Zarit, 2006). Conversely, the use of measures that are not specific to carers allows the results to be compared and contrasted with the general non caregiving population (Zarit, 2006) and therefore should be of more use to carer organisations highlighting carer difficulties.

5. Limitations

Retrospective analysis of this study highlights a number of methodological limitations, which should be taken into account when evaluating the findings. Hare (2004) stated that one of the difficulties in studying informal carers is that they are a 'hidden' population, with many of them not even recognising themselves

as being a carer. All carers within this study were recruited through organisations which provided services to carers. Therefore, in addition to identifying themselves as being a carer, they had also been in contact or gained support from an organisation at some point. Thus Indicates that this population may have been more proactive in seeking additional social or practical support, thus creating a potential recruitment bias.

Alternatively, it should be considered that the carers may have had relatively high levels of anxiety and depression and that this contact may have been initiated by them or a third party out of need. As the mean length of caring time was seven years, it is reasonable to expect that the CGID should have been linked to a service in the support system. However, this indicates that our sample was biased towards those that were established in the caregiving role. It may be that many of the 'hidden' population referred to by Hare (2004) consist of those who have recently became CGID.

The limited response rate did serve to limit the sample size of this study which may have weakened the generalizability of results. In hindsight the researcher feels that the use of a face to face distribution method for questionnaires by the researcher may have promoted an improved response rates, although as already noted in the strengths, this may have produced a reporting bias.

In our sample the CGID were providing a mean of eighty-four hours of care given per week, which is approximately equivalent to working 2.25 full time jobs per week. Therefore, the low

response rate may also be attributed to the time pressures on the CGID, as it is reasonable to presume that those experiencing the highest levels of distress may have felt unable to take the time to participate.

Though the levels of distress were high in those who participated, there may still have been a bias with those in most distress being least likely to optin to the study. Distress, in particular depression, is often associated with low motivation and feeling overwhelmed (Hawton et al., 2005; Scott, 1998); which could have created a potential barrier to participating in the study.

It should also be considered that those who did participate and reported less distress could have been on medication, such as mood enhancers or anxiety medication. This could have had an important influence on decreasing distress levels and masking the severity of distress symptoms. Information on medication was not recorded or controlled for in this study.

One of the difficulties within this area of research is that there are numerous factors that may have been useful to include such as measures of financial situation, other commitments such as child care, social support etc. The exclusion of these factors from this study can be considered a limitation; however the reality is that practical issues, such as recruitment, limit the number of variables that can be viably included within one study.

6. Summary

This research highlighted the difficulties present for CGID; 65 percent had some level of anxiety while 41 percent had mild to severe depression. Many of the CGID were approaching, or were of retirement age, but were on average working twelve hours a day to provide care for a partner or parent. Typically they had been providing some level of care for seven years and reported a significant decline in the quality of the relationship with the person they cared for over this time. It is evident from the amount of distress reported that there is a significant need for increased carer support.

This study aimed to investigate a number of the caregiver factors that resulted in such high levels of stress, by using attachment theory and social cognitive theory as a framework. Within this framework early attachment experiences to one's parents are considered to be one of the most powerful bonds an individual constructs. Attachment is salient throughout the individual's life span via the creation of internal working models which develop their sense of self, well-being and efficacy (Browne & Shlosberg, 2006; Troll, 1994). These feelings of self-efficacy can be regarded as a self-confident vision of one's capabilities to deal with life's stressors, in other words as the "can-do" cognition (Schwarzer, 1992). The findings of this study thereby indicate that high CSE correlates with both more secure attachment and reduced distress levels.

Having high CSE affects distress in two ways. Firstly it influences the way individuals gauge potential stressors, this assessment enables them to evaluate life's obstacles as challenges, as opposed to threats. Consequently these carers experience less distress than those with low CSE. Secondly, having higher CSE facilitates individuals to choose and use the most effective coping strategy in dealing with the stressor. This results in the individual being more effective in reducing their distress levels. In this manner, CSE serves to mediate the relationship between anxious (self model) attachment and anxiety.

CSE does not appear to mediate the relationship between attachment and either stress or depression. Instead there may be a bio-directional relationship between CSE and stress and depression. Lower CSE beliefs contribute to these two levels of distress in the manner described here. Heightened stress and depression prompt a decrease in CSE by reducing emotional, cognitive and physical resources available to the individual.

The study of attachment styles linked to stress may be considered, by some, as unimportant as attachment styles are considered highly resistant to change. However, if attachment style is conceptualised as a risk factor in the development of stress and anxiety, in the same way that diabetes places an individual at risk of developing further medical complications; then the usefulness of studying attachment style becomes evident. Similarly, it becomes apparent that just because we cannot readily change the attachment style, just as we cannot

remove the diabetes, the knowledge of this link is still informative.

Knowledge of the risk factors help us understand who is most at risk and what factors add to this risk, therefore allowing for more effective monitoring, education and intervention to prevent and reduce complications. By considering those with anxious attachment styles as being at a heightened risk of developing stress and anxiety, health, social and voluntary staff working with these carers would be more aware of who is at risk, enabling more appropriate and timely intervention.

Early detection of risk factors is important as evidence indicates that interventions can be successful at increasing an individual's sense of self-efficacy which results in reduced distress (Gattuso et al., 1992). Even though effective targeting of the attachment style may not be possible, the impact on anxiety may be weakened by enhancing CSE. Furthermore, the finding that CSE was strongly correlated to carer depression and perceived stress indicates that interventions aimed at increasing CSE beliefs may also facilitate in lowering depression and perceived stress levels.

Importantly, this study gives an indication of why some carers use ineffective coping strategies. A low CSE does not necessary mean that a carer is not capable of effectively using coping strategies, but it does indicate that they do not have belief in their own ability to use the most effective coping strategy. Targeting these CSE beliefs may prove critical in preventing carers becoming so distressed that they require

medical treatment for themselves and are unable to continue in their caring role.

7. Future directions

CSE was found to be strongly correlated with all three measures of distress, highlighting the need to further explore the role of CSE. Research using longitudinal designs, would help clarify issues over direction of causality. Outcome studies of CGID, where participants have been given an intervention based on boosting their CSE, would help establish the effectiveness of this type of intervention. A further avenue of future research is the relationship between CSE, anticipatory grief and depression in CGID.

Evidence has demonstrated that individuals with different attachment styles may benefit from different forms of support (Simpson et al., 2007). Collins and Feeney (2004) found that avoidant individuals are more likely to appraise ambiguously supportive information as being more negative if it is delivered prior to them performing a stressful task. Indicating, that research into this area may help improve support for carers, leading to the creation of more 'carer centred' intervention approaches.

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Appendices

Appendix 1

North of Scotland Research Ethics Committees

Summerfield House
2 Eday Road
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Telephone: 01224 558480

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6 June 2008

Miss Sonya M Campbell
Trainee Clinical Psychologist
NHS Grampian
CAMH Service
The Rowan Centre
Maryhill
ELGIN
IV30 1AU

Dear Miss Campbell

Full title of study: Coping self-efficacy, distress and attachment in carers of individuals with dementia
REC reference number: 08/S0801/80

The Research Ethics Committee reviewed the above application at the meeting held on 29 May 2008.

Documents reviewed

The documents reviewed at the meeting were:

Document	Version	Date
Application	5.6	8 May 2008
Investigator CV		7 May 2008
Protocol	8	7 May 2008
Questionnaire: HAD Scale		
Questionnaire: Perceived Stress Scale		
Questionnaire: Coping Self - efficacy		
Questionnaire: Relationship Questionnaire		
Questionnaire: Background Information	1	7 May 2008
Advertisement	1	7 May 2008
Letter of invitation to participant		
Participant Information Sheet	2	6 May 2008
Participant Consent Form	1	7 May 2008

Document	Version	Date
Follow up Letter	1	7 May 2008
Opt in Slip		
Indemnity/Insurance		
Student Confirmation		22 April 2008
Suzanne Rourke - CV		

Provisional opinion

The Committee would be content to give a favourable ethical opinion of the research, subject to receiving a complete response to the request for further information set out below.

It must be noted that full ethical approval for the study should not be assumed until you receive a final letter of approval.

The Committee delegated authority to confirm its final opinion on the application to the Ethics Co-ordinator.

Further information or clarification required

Thank you for attending the meeting and clarifying the following points:

- The Committee wondered whether you would be looking at the prior relationship between the patient and carer. You replied that this would be a different study altogether and that it was not feasible at this stage due to time and resources.
- The Committee noted that the care organisations would be sending out the packs and wondered why the packs could not be made anonymous. You replied that originally, the packs would be sent out with an 'opt-in' slip to be returned to you. However, you would be happy to make the packs anonymous. The Committee added that the reminder letter would then need to be a 'blanket' reminder and that no Consent Form would be required as the packs would be anonymous.
- The Committee asked where the data would be stored. You replied that the data would be stored in the Department of Psychology within the NHS on a password protected computer.

In addition, the Committee would like the following points addressed:

- A10 - please clarify how the care organisations will be identified.
- A10 - please submit a revised copy of the Reminder Letter as per the comments above.
- A39 - participant's personal details will not need to be stored if the packs are made anonymous.
- A45-1 - please submit a copy of the Peer Review.

Participant Information Sheet

- Under the heading 'Do I have to take part?', please insert 'No' at the start of the first sentence.
- Under the heading 'Contact for Further Information', please insert your Supervisor's details.

When submitting your response to the Committee, please send revised documentation where appropriate **underlining or otherwise highlighting the changes you have made and giving revised version numbers and dates.**

The Committee will confirm the final ethical opinion within a maximum of 60 days from the date of initial receipt of the application, excluding the time taken by you to respond fully to the above points. A response should be submitted by no later than 4 October 2008.

Membership of the Committee

The members of the Committee who were present at the meeting are listed on the attached sheet.

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees (July 2001) and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

08/S0801/80

Please quote this number on all correspondence

Yours sincerely

 Dr Alex Johnstone
Vice-Chair

Enclosures: List of names and professions of members

North of Scotland Research Ethics Committee (1)

Attendance at Committee meeting on 29 May 2008

Committee Members:

<i>Name</i>	<i>Profession</i>	<i>Present</i>
Dr John Callender	Associate Medical Director	Yes
Dr Helen Galley	Senior Lecturer in Anaesthesia & Intensive Care	No
Dr Paul Haggarty	Senior Research Scientist	No
Dr Morley Hutchinson	Lay Member - Retired Research Fellow	Yes
Dr Alex Johnstone	Vice-Chair & Non-Medical Research Specialist	Yes
Mr Albert Mclean-Bullen	Lay Member - Farmer	Yes
Mrs Kathryn McMullan	Pharmacist	Yes
Mr Leslie E F Moffat	Consultant Urologist	No
Mrs Jane Ormerod	Senior Nurse	No
Rev Mark Rodgers	Lay Member - Hospital Chaplain / Minister	Yes
Mrs Shirley Shay	Lay Member - Associate Solicitor	Yes
Mrs Mary Simpson	Research Nurse	Yes
Dr Angus J Thompson	Chair & Consultant Radiologist	No
Prof George Youngson	Consultant Paediatric Surgeon	Yes

Also in attendance:

<i>Name</i>	<i>Position (or reason for attending)</i>
Miss Karen Gauld	Acting Administrator
Mrs Carol Irvine	Acting Co-ordinator
Dr Rachel Venables	Acting Scientific Advisor

Appendix 2

North of Scotland Research Ethics Committees

Summerfield House
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18 June 2008

Miss Sonya M Campbell
Trainee Clinical Psychologist
NHS Grampian
CAMH Service, The Rowan Centre,
Maryhill, the High street, Elgin
IV30 1AU

Dear Miss Campbell

Full title of study: Coping self-efficacy, distress and attachment in carers of individuals with dementia
REC reference number: 08/S0801/80

Thank you for your letter of 14 June 2008, responding to the Committee's request for further information on the above research and submitting revised documentation.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised.

Ethical review of research sites

The favourable opinion applies to the above site.

Conditions of the favourable opinion

The favourable opinion is subject to the following conditions being met prior to the start of the study.

Management permission or approval must be obtained from each host organisation prior to the start of the study at the site concerned.

Management permission at NHS sites ("R&D approval") should be obtained from the relevant care organisation(s) in accordance with NHS research governance arrangements. Guidance on applying for NHS permission is available in the Integrated Research Application System or at

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

<i>Document</i>	<i>Version</i>	<i>Date</i>
Application	5.6	08 May 2008
Investigator CV		07 May 2008
Protocol	8	07 May 2008
Covering Letter		
Peer Review		
Questionnaire: Relationship Questionnaire		
Questionnaire: Background Information	1	07 May 2008
Questionnaire: HAD Scale		
Questionnaire: Perceived Stress Scale		
Questionnaire: Coping Self - efficacy		
Advertisement	1	07 May 2008
Letter of invitation to participant		
Participant Information Sheet	3	13 June 2008
Participant Consent Form	1	07 May 2008
Response to Request for Further Information		
Reminder letter - carer	2	14 June 2008
Follow up Letter	1	07 May 2008
Opt in Slip		
Indemnity/Insurance		
Student Confirmation		22 April 2008
Suzanne Rourke - CV		

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees (July 2001) and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

After ethical review

Now that you have completed the application process please visit the National Research Ethics Website > After Review

You are invited to give your view of the service that you have received from the National Research Ethics Service and the application procedure. If you wish to make your views known please use the feedback form available on the website.

The attached document "After ethical review – guidance for researchers" gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Progress and safety reports
- Notifying the end of the study

The NRES website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

We would also like to inform you that we consult regularly with stakeholders to improve our service. If you would like to join our Reference Group please email referencegroup@nres.npsa.nhs.uk.

08/S0801/80

Please quote this number on all correspondence

With the Committee's best wishes for the success of this project

Yours sincerely

Dr Angus J Thompson
Chair

Appendix 3

Background Information

Please answer the following questions.

About You

1. Are you **Male** or **Female**? (please circle)
2. What age are you?yearsmonths
3. Do you care for someone with dementia? **Yes/No** (please circle)
4. How long have you known the person with dementia?
.....years.....months

About the person with dementia

1. Is the person you care for **Male** or **Female**? (please circle)
2. How old is the person you care for?years.....months

About Your relationship

1. What is your relationship to the person with dementia?
2. Do you live with this person? **Yes/No** (please circle)
3. How long have you been a carer for this person?
4. How many hours care do you provide for this person per week?hours
5. How would you describe your relationship with the person you care for
BEFORE YOU BECAME THEIR CARER? (please circle)

very poor poor okay good very good

6. How would you describe your relationship with the person you care for
NOW? (please circle)

very poor poor okay good very good

Appendix 4

About You

Relationship Questionnaire

Please read the directions:

*Following are descriptions of four general relationship styles that people often report. Please read each description and **CIRCLE** the letter corresponding to the style that best describes you or is closest to the way you generally are in your close relationships.*

Please circle one

- A.** It is easy for me to become emotionally close to others. I am comfortable depending on them and having them depend on me. I don't worry about being alone or having others not accept me.
- B.** I am uncomfortable getting close to others. I want emotionally close relationships, but I find it difficult to trust others completely, or depend on them. I worry that I will be hurt if I allow myself to become too close to others.
- C.** I want to be completely emotionally intimate with others, but I often find others are reluctant to get as close as I would like. I am uncomfortable being without close relationship, but I sometimes worry that others don't value me as much as I value them.
- D.** I am comfortable without close emotional relationships. It is very important to me to feel independent and self-sufficient, and I prefer not to depend on others or have others depend on me.

Please rate each of the following relationship styles according to the extent to which you think each description corresponds to your general relationship style.

	Not at all like me		Somewhat like me		Very much like me	
A. It is easy for me to become emotionally close to others. I am comfortable depending on them and having them depend on me. I don't worry about being alone or having others not accept me.	1	2	3	4	5	6 7
B. I am uncomfortable getting close to others. I want emotionally close relationships, but I find it difficult to trust others completely, or depend on them. I worry that I will be hurt if I allow myself to become too close to others.	1	2	3	4	5	6 7
C. I want to be completely emotionally intimate with others, but I often find others are reluctant to get as close as I would like. I am uncomfortable being without close relationship, but I sometimes worry that others don't value me as much as I value them.	1	2	3	4	5	6 7
D. I am comfortable without close emotional relationships. It is very important to me to feel independent and self-sufficient, and I prefer not to depend on others or have others depend on me.	1	2	3	4	5	6 7

Appendix 5

About the person you care for

The following questions are about everyday activities with which the person you are being asked about might have difficulty. Please indicate how often difficulties occur by drawing a line through the appropriate circle like this:

	not applicable	unknown	SCORE
never ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ always	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The higher the number the more difficulty the person has with the activity in question. If difficulties never occur please mark ①. If difficulties always occur mark ⑩. If a question does not apply to the person for any reason please put a cross in the "not applicable" box. If you cannot decide on the difficulty the person has please put a cross in the "unknown" box. If you have problems understanding any of the questions, please ask for help. Please do not write in the "Score" box. Thank you very much in advance for your co-operation.

Reproduced with permission of S. Karger AG, Basel.

Hindmarch, I, Lehfeld, H, de Jongh, P, Erzigkeit, H, *Dementia and Geriatric Cognitive Disorders*, 1998, 9 (suppl 2), 24-25.

Does the person have difficulty...			Not applicable	Unknown	SCOI
1.	...managing his/her everyday activities?	never ①②③④⑤⑥⑦⑧⑨⑩ always	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	...taking care of him/herself?	never ①②③④⑤⑥⑦⑧⑨⑩ always	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	...taking medication without supervision?	never ①②③④⑤⑥⑦⑧⑨⑩ always	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	...with personal hygiene?	never ①②③④⑤⑥⑦⑧⑨⑩ always	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	...observing important dates or events?	never ①②③④⑤⑥⑦⑧⑨⑩ always	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	...concentrating on reading?	never ①②③④⑤⑥⑦⑧⑨⑩ always	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.	...describing what he/she has just seen or heard?	never ①②③④⑤⑥⑦⑧⑨⑩ always	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.	...taking part in a conversation?	never ①②③④⑤⑥⑦⑧⑨⑩ always	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.	...using the telephone?	never ①②③④⑤⑥⑦⑧⑨⑩ always	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.	...taking a message for someone else?	never ①②③④⑤⑥⑦⑧⑨⑩ always	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11.	...going for a walk without getting lost?	never ①②③④⑤⑥⑦⑧⑨⑩ always	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12.	...shopping?	never ①②③④⑤⑥⑦⑧⑨⑩ always	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.	...preparing food?	never ①②③④⑤⑥⑦⑧⑨⑩ always	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.	...correctly counting out money?	never ①②③④⑤⑥⑦⑧⑨⑩ always	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.	...understanding his/her personal financial affairs?	never ①②③④⑤⑥⑦⑧⑨⑩ always	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16.	...giving directions if asked the way?	never ①②③④⑤⑥⑦⑧⑨⑩ always	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17.	...using domestic appliances?	never ①②③④⑤⑥⑦⑧⑨⑩ always	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18.	...finding his/her way in an unfamiliar place?	never ①②③④⑤⑥⑦⑧⑨⑩ always	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19.	...using transportation?	never ①②③④⑤⑥⑦⑧⑨⑩ always	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20.	...participating his/her leisure activities?	never ①②③④⑤⑥⑦⑧⑨⑩ always	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21.	...continuing with the same task after a brief interruption?	never ①②③④⑤⑥⑦⑧⑨⑩ always	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22.	...doing two things at the same time?	never ①②③④⑤⑥⑦⑧⑨⑩ always	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23.	...coping with unfamiliar situations?	never ①②③④⑤⑥⑦⑧⑨⑩ always	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24.	...doing things safely?	never ①②③④⑤⑥⑦⑧⑨⑩ always	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25.	...performing a task when under pressure?	never ①②③④⑤⑥⑦⑧⑨⑩ always	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Appendix 6

Carer organisations involved

Name of Organisation	location
Anderson's	Moray
Alzheimer Scotland	Aberdeen
	Angus
	Drumbarton
	Edinburgh
	Highland
	Kilmarnock
	Lewis and Harris
	Moray
	Portsmouth
Balgownie Day Hospital	Aberdeen
Carers Scotland	Glasgow
Central Carers	Falkirk
Helensburgh and Lomond Carers Project	Helensburgh & Lomond
Highland Community Care Forum	Highland
Moray Carers	Moray
Whinnybank Day and Care centres	Moray

Appendix 7



CAMHs,
The Rowan Centre,
Maryhill,
High Street,
Elgin,
IV30 1AT

Dear Carer

I am conducting a research project on individuals who provide social, emotional or practical support to a family member or partner who has dementia. Specifically the study is looking at carer's relationship styles, coping and levels of distress. I have enclosed an information sheet which will explain more about the study, and its possible benefits.

If you would be willing to participate please return the opt-in slip, using the enclosed stamped addressed envelope, you will then be sent some questionnaires. Or if you have any questions, please do not hesitate to contact me at [redacted] or on [redacted]. For those of you, who are not interested in taking part, please ignore this letter.

Whatever your decision I would like to thank you for taking the time to read and consider this.

Best wishes

Sonya Campbell

Appendix 8

Information Sheet

Coping, distress and attachment in carers of individuals with dementia

You have been invited to participate in a study being carried out as part of a Doctorate in Clinical Psychology in association with the University of Edinburgh and NHS.

Being a carer, whether part or full time is a difficult job both mentally and physically. As part of this study we would like to investigate carer's relationship styles, their perception of their coping ability and how these affect their psychological well being. By analysing the findings of this study we hope to further our knowledge into the needs of carers and the creation of more relevant training.

It is important for you to understand why the research is being done and what it will involve if you agree to take part. Please take time to read the following information carefully and discuss it with others if you wish. If there is anything that is not clear, or if you would like more information do not hesitate to contact us.

Why have I been chosen?

This research is being conducted with informal carers, who provide social, emotional and / or practical support to a family member or partner with dementia, and are registered with carers organisations.

Do I have to take part?

No, it is up to you to decide whether to take part. If you do decide to take part you will be asked to sign a consent form, although you are still free to withdraw at any time and without giving a reason. Your decision not to take part or to withdraw at any time will not affect the service you receive from the carers organisation.

What will happen to me if I take part?

If you decide to take part you will be asked to:-

- Complete the attached opt-in slip and return it using the enclosed stamped addressed return envelope.
- You will then receive a research pack through the post. This will contain a set of questionnaires and a stamped addressed return envelope.
- If you are still willing to participate, please fill in the questionnaires, this will take approximately 20-30 minutes to complete.
- Once completed, return the questionnaires using the return envelope.

What are the possible benefits of taking part?

It is hoped the results of this study will aid the development of future carer support and improve carer training packages.

Will my taking part in this study be kept confidential?

All information, which is collected, about you during the course of the research will be kept strictly confidential.

What will happen to the results of the research study?

The research is being conducted as part of a Doctorate in Clinical Psychology and will be written up in the form of a thesis, a copy of which will be stored at the University of Edinburgh's Library. The study may also be presented for publication at a later date.

Feedback on your individual results will not be possible. However, if you would like to know the overall findings of the study, an abstract can be sent to you on request.

Who is organising and funding the research?

The research is being conducted as part of a Doctorate in Clinical Psychology, in association with the University of Edinburgh. The researcher is not being paid for conducting this research.

Who has reviewed the study?

The North of Scotland research ethics committee has reviewed this study.

Contact for Further Information

If you would like any further information or have any questions please do not hesitate to contact me at:

or my supervisor Katharine Morris at:

Thank you for taking the time to read this.

Appendix 9

Opt in Slip

I am interested in taking part in the study and would like a research pack sent to me.

My name is:.....

My address is:.....

.....

.....

Please note participants can withdraw from the study at any time

Please return using prepaid envelope to :

Sonya Campbell, CAMHS, The Rowan Centre, Maryhill, High Street, Elgin,

IV30 1AT

Appendix 10



CAMHs,
The Rowan Centre,
Maryhill,
High Street,
Elgin,
IV30 1AT
03.06.2008

Dear Carer

I am conducting a research project on individuals who provide social, emotional or practical support to a family member or partner who has dementia. Specifically the study is looking at carer's relationship styles, coping and levels of distress. I have enclosed an information sheet which will explain more about the study, and its possible benefits.

If you would be willing to participate please return the questionnaires using the enclosed stamped addressed envelope. Or if you have any questions, please do not hesitate to contact me at For those
of you, who are not interested in taking part, please ignore this letter.

Whatever your decision I would like to thank you for taking the time to read and consider this.

Best wishes

Sonya Campbell

Appendix 11

CAMHS,
Rowan Centre,
Maryhill,
High Street,
Elgin,
IV30 1AT

Dear carer

**Research into Coping, distress and attachment in carers of
individuals with dementia**

I would like to take this opportunity to extend a massive thank you, to all of you who have returned your questionnaires. If you have not returned them yet, but would still like to take part, there is still time and your questionnaires will be very gratefully received. However, if you have decided to withdraw from the study at this time we completely respect your decision.

Sometimes people find that when they have spent some time reflecting on and answering questions about their lives, they realise they are feeling anxious or depressed. These feelings can be common amongst carers and shouldn't be ignored, after all it's important to take care of yourself too. Due to the anonymous nature of this study we are unable to personally identify if you may be feeling this way, but if you are finding things difficult, please do get in touch with your GP. Alternatively you might like to contact a voluntary group like the Samaritans at jo@samaritans.org or on 08457 909090.

If you have any questions please do not hesitate to contact me at

Again I would like to thank everyone for your time and effort.
Best Wishes

Sonya Campbell

Appendix 12

Dear Carer

I am conducting a research project on individuals who provide support to a family member or partner who has dementia. Specifically the study is looking at carer's relationship styles, coping and levels of distress. I am looking for more carers to complete the postal questionnaires, which should take 20-30 minutes. If you are interested in taking part or would like more information please contact me at

Best Wishes

Sonya Campbell

Appendix 13

About you

When things aren't going well for you, or when you're having problems, how confident or certain are you that you can do the following:

Rate on an 11 point scale the extent to which you believe you can do each of the statements

**Cannot
do at all**

**Moderately
certain can do**

**Certain
can do**

0 1 2 3 4 5 6 7 8 9 10 11

	Rating
1. Break an upsetting problem down into smaller parts.	
2. Sort out what can be changed, and what cannot be changed.	
3. Make a plan of action and follow it when confronted with a problem.	
4. Leave options open when things get stressful.	
5. Think about one part of the problem at a time.	
6. Find solutions to your most difficult problems	
7. Resist the impulse to act hastily when under pressure.	
8. Try other solutions to your problem if your first solutions don't work.	
9. Talk positively to yourself.	
10. Stand your ground and fight for what you want.	
11. See things from the other person's point of view during a heated argument.	
12. Develop new hobbies or recreations.	
13. Make unpleasant thoughts go away.	
14. Take your mind off unpleasant thoughts.	
15. Stop yourself from being upset by unpleasant thoughts.	
16. Keep from feeling sad.	
17. Keep from getting down in the dumps.	
18. Look for something good in a negative situation.	
19. Keep yourself from feeling lonely.	
20. Visualise a pleasant activity or place.	
21. Pray or mediate	
22. Get friends to help you with the things you need.	
23. Get emotional support from friends and family.	
24. Make new friends.	
25. Do something positive for yourself when you are feeling discouraged	
26. Get emotional support from community organisations or resources	

Appendix 14

About you

The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate **how often** you felt or thought a certain way. Although some of the questions are similar, there are differences between them and you should treat each one as a separate question. The best approach is to answer each question fairly quickly. That is, don't try to count up the number of times you felt a particular way, but rather indicate the alternative that seems like a reasonable estimate.

Please Circle as appropriate

	Never	Almost never	Some- times	Fairly often	Very often
1. In the last month, how often have you been upset because of something that happened unexpectedly?	0	1	2	3	4
2. In the last month, how often have you felt that you were unable to control the important things in your life?	0	1	2	3	4
3. In the last month, how often have you felt nervous and 'stressed'?	0	1	2	3	4
4. In the last month, how often have you dealt successfully with irritating life hassles?	0	1	2	3	4
5. In the last month, how often have you felt that you were effectively coping with important changes that were occurring in your life?	0	1	2	3	4
6. In the last month, how often have you felt confident about your ability to handle your personal problems?	0	1	2	3	4
7. In the last month, how often have you felt that things were going your way	0	1	2	3	4
8. In the last month, how often have you found that you could not cope with all the things that you had to do?	0	1	2	3	4
9. In the last month, how often have you been able to control irritations in your life?	0	1	2	3	4
10. In the last month, how often have you felt that you were on top of things?	0	1	2	3	4

Appendix 15

About you

1

Doctors are aware that emotions play an important part in most illnesses and if your doctor knows about these feelings he will be able to help you more. This questionnaire is designed to help your doctor to know how you feel.

Read each item and place a firm tick in the box opposite the reply that comes closest to **how you have been feeling in the past week**.

Don't take too long over your replies; your immediate reaction to each item will probably be more accurate than a long thought-out response.

Tick only one box in each section

I feel tense or 'wound up':

Most of the time
A lot of the time
Time to time, Occasionally
Not at all

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

I feel as if I am slowed down:

Nearly all the time
Very often
Sometimes
Not at all

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

I still enjoy the things I used to enjoy:

Definitely as much
Not quite so much
Only a little
Hardly at all

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

I get a sort of frightened feeling like 'butterflies' in the stomach:

Not at all
Occasionally
Quite often
Very often

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

I get a sort of frightened feeling as if something awful is about to happen:

Very definitely and quite badly
Yes, but not too badly
A little, but it doesn't worry me
Not at all

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

I have lost interest in my appearance:

Definitely
I don't take so much care as I should
I may not take quite as much care ..
I take just as much care as ever

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

I can laugh and see the funny side of things:

As much as I always could
Not quite so much now
Definitely not so much now
Not at all

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

I feel restless as if I have to be on the move:

Very much indeed
Quite a lot
Not very much
Not at all

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

Worrying thoughts go through my mind:

A great deal of the time
A lot of the time
From time to time but not too often .
Only occasionally

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

I look forward with enjoyment to things:

As much as ever I did
Rather less than I used to
Definitely less than I used to
Hardly at all

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

I feel cheerful:

Not at all
Not often
Sometimes
Most of the time

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

I get sudden feelings of panic:

Very often indeed
Quite often
Not very often
Not at all

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

I can sit at ease and feel relaxed:

Definitely
Usually
Not often
Not at all

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

I can enjoy a good book or radio or TV programme:

Often
Sometimes
Not often
Very seldom

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

Do not write below this line